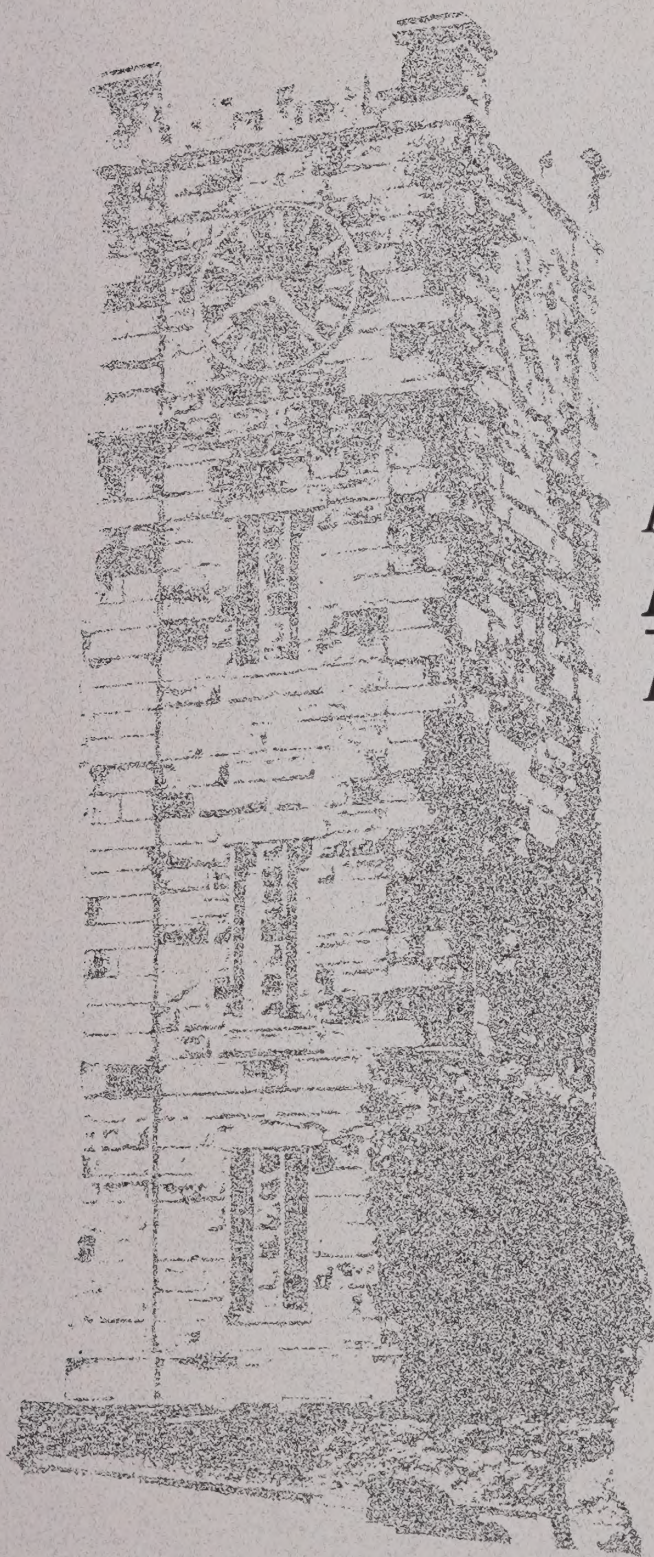




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Benicia General Plan
Into the 21st Century

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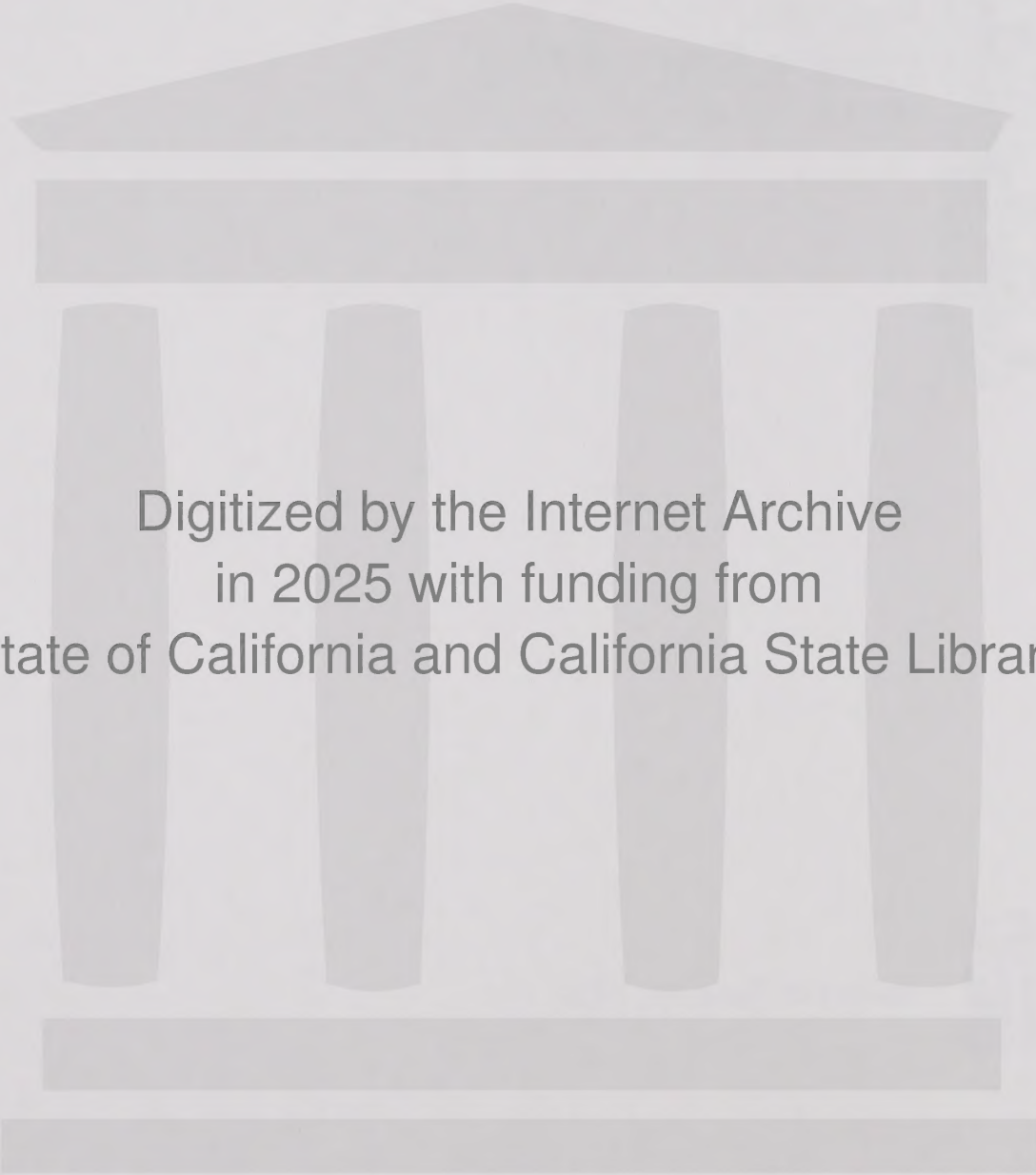
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Thanks to the many volunteers who supported the work of GPOC and the formation of the New General Plan.

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1. INTRODUCTION

Benicia has a long history of big ideas. Originally the city was to be a major port; then it was the state capital; later it was a transportation hub. An increase in population and jobs that started in the 1970s is expected to continue, though at a slower pace, through 2015. During this period of expansion, it is vital that Benicia's future be managed wisely to preserve and enhance its many attractive qualities.

This chapter details the planning, legal, and physical framework for the Benicia General Plan. Specifically it describes the role of the plan, its legal footing, its organization, Benicia's relationship to the region, and a description of the planning area.

A. WHAT IS THE BENICIA GENERAL PLAN?

1. ROLE OF THE GENERAL PLAN

The Benicia General Plan is the principal policy document for guiding future conservation and development in the city. It reflects the community's shared values and determination of what Benicia is and should continue to be—an uncommonly special place.

The Plan has a long-term horizon, addressing an approximately 15- to 20-year time frame. At the same time, it brings overall direction to the day-to-day decisions of the City Council, its commissions, and City staff.

The General Plan determines what kind of urban development should take place and where and when, and who in the City will be charged with getting it done. The Plan—

- Expresses the desires of Benicia residents in regard to the physical, social, economic, cultural, and environmental character of the city;
- Serves as a comprehensive guide for making decisions about land use, economic development, road improvements, and protecting natural resources and the public health and safety;
- Provides the legal foundation for all zoning, subdivision, and public facilities ordinances, decisions, and projects—all of which must be consistent with the General Plan.

The general plan is to be considered and used as a whole. One section is not to be stressed while ignoring others; rather all of the sections should be used together, with flexibility. Used in this way, the Plan will become a powerful tool for ensuring consistency of City actions, while remaining responsive to changing needs and times.

2. LEGAL REQUIREMENTS

The general plan is a State-mandated blueprint for physical development. The general plan derives its authority as the summit of land use regulations from the California Government Code. The City Council adopts the general plan by resolution as a legal document.

Seven general plan “elements” are required by law: Land Use, Circulation, Housing, Conservation, Open Space, Safety, and Noise. How these elements are incorporated into the organization of this General Plan is explained in Section 4, below, and in Table 1-2. When optional subjects are added to a general plan (for example, “economic development” and “health”), they have the same status as a mandated element. All general plan elements carry equal weight (*Sierra Club v. Board of Supervisors* [1981] 126 Cal.App.3d 698). No single section, chapter, or subject supersedes any other.

3. THE GENERAL PLAN PROCESS

In late 1992, the Benicia City Council formed a citizens’ task force to review the General Plan and report its findings. As a result, in late 1993, a General Plan Task Force Report was issued. The report stated that many of the policies and programs in the General Plan had not been revised since 1979, had already been implemented, or were no longer relevant to current or future conditions.

In June 1994, the City Council adopted a resolution directing that preparations begin for a comprehensive update of the General Plan. Accordingly, the Council formed a 17-member citizens’ General Plan Oversight Committee (GPOC) to work with City staff to design the update process. GPOC was charged with facilitating public outreach, monitoring the update process to be sure it is on time and within budget, providing volunteer assistance, and assisting in community workshops and forums.

Consultants were engaged to develop a work program for a General Plan Update. The work program was presented to and accepted by the City Council in November 1994. The City Council adopted a budget for the work and directed staff and the GPOC to retain consultants to assist GPOC in undertaking the actual update.

PUBLIC OUTREACH PROGRAM

This General Plan is built on issues defined by the community—issues that focused on what should be preserved and what should change. Some of those

issues came from discussion by the General Plan Oversight Committee (GPOC) of a number of Background Reports produced by the City's consultants in late 1995 and early 1996. Many other issues, however, were identified during the course of two communitywide surveys and six public workshops in 1995 and 1996.

At the outset of the process to involve the public, GPOC mailed an open-response questionnaire to gauge, in a general way, public opinion concerning issues to be addressed in the General Plan update. In response to ideas generated through the questionnaire, the Community Design and Planning Services (CDPS) of the University of California (Davis) conducted a series of workshops in neighborhoods throughout the city. To involve the city's youth, CDPS oversaw workshops and discussion sessions in all Benicia schools. The issues brought out in the first questionnaire and the workshops were tested with a longer survey mailed to the entire community.

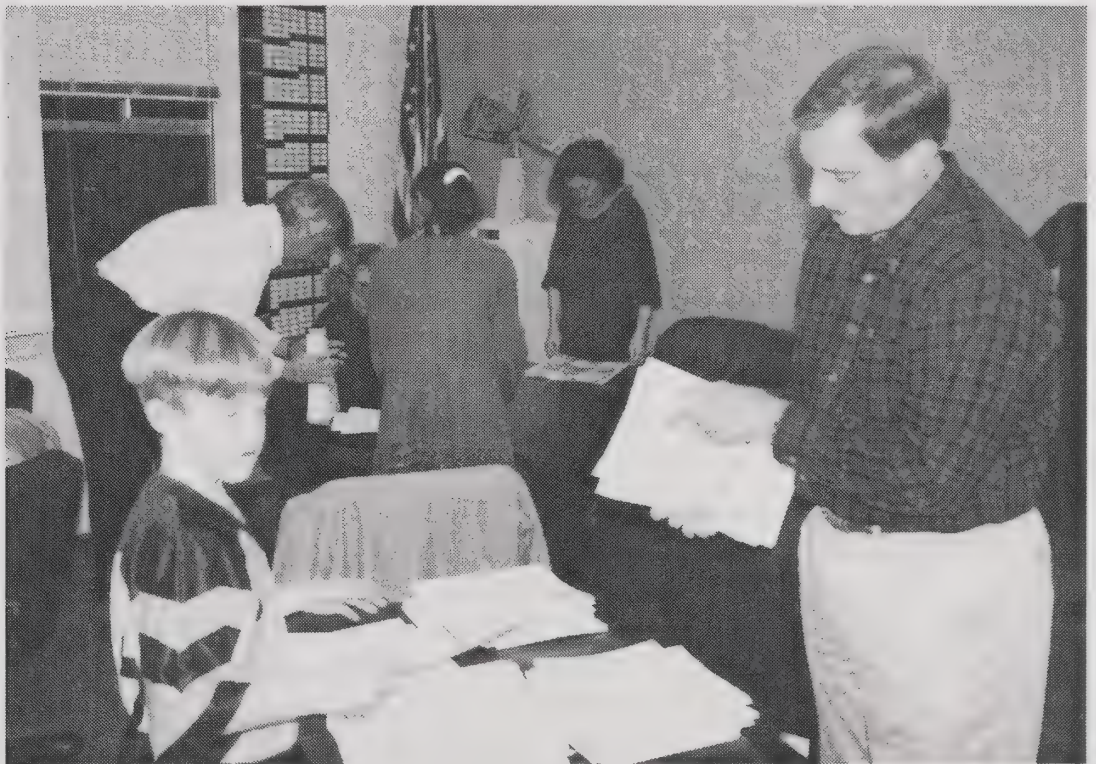
Survey 1

A two-page questionnaire mailed by the GPOC to Benicians in June 1995 was answered by nearly 500 people. The results pinpointed what people deeply care about in Benicia:

Benicia's small-town atmosphere

Economic health of First Street

Objectivity in business development



Workshops

In the summer of 1995, the General Plan Oversight Committee hosted six public workshops on the General Plan update. More than a hundred Benicians from all areas of town attended the workshops. Major concerns were:

- cultural resources
- quality of life
- small town character; and
- the waterfront.

Workshop participants generally supported:

- First Street and tourism;
- a diversified economy;
- opportunities to live and work in town; and
- infill development, rather than expansion.

Youth Outreach

Students of all ages were involved in the process of identifying what is important to people living in Benicia. Different methods for garnering responses, ideas, and concerns were used for each age group.

Elementary school students were asked to draw pictures of the things they considered “important.” The drawings centered on themes of environmental quality and recreational facilities. Middle school students were organized into small groups; each group was given a 24-exposure disposable camera to photograph representations of their ideas. The resulting collage of photos expressed concerns about pollution, increased housing construction, traffic congestion, parking, and historic preservation. They desired more green space and recreational facilities for their age group. High school students responded to a two-page survey; results of the survey yielded that almost half of the high school students would live in Benicia as an adult; 65 percent wanted to raise a family here; and 89 percent felt safe in the city.

Survey 2

A second survey was mailed to 11,000 households and businesses in Benicia in January 1996. Nearly 3,000 completed surveys were returned, which gave the survey results a high level of confidence. The following 10 issues received the highest level of support (69% or greater) as being important to the community:

1. Feeling safe in residential areas at night
2. Feeling safe Downtown at night
3. Good public schools
4. Balance growth to ensure maintaining Benicia's quality of life
5. Small town atmosphere
6. Growth should maintain small-town character
7. Citizens need a voice in growth decisions
8. Attract businesses that sustain environmental quality
9. Pedestrian-friendly streets in the Downtown and other commercial areas
10. Library facilities

A number of issues raised by the survey were opposed, although with the exception of Sky Valley (two-thirds of Benicians do not want residential development in Sky Valley) the levels of opposition were not as great (generally only 20 to 30 percent), in contrast to the very high levels of support (70 to 90 percent) for the 10 issues listed above. Refer to Appendix A for more detailed survey results.

The City's consultants and citizen groups prepared 11 background reports at the end of 1995. GPOC began in February 1996 to use that information, the results of a communitywide survey taken in January 1996, and a series of community workshops held during the summer to identify the issues to be faced in updating the Benicia General Plan. An Issues, Goals, and Policies (IGPs) report was prepared January 21, 1997 and reviewed by the GPOC, Planning Commission, and City Council. These reviews ensured that the IGPs document contained goals and policies for what are the most significant issues for the community.

The City's consultants then prepared a Goals, Policies, and Programs report (June 6) and a Preferred Alternatives Report (June 30) which incorporated additions and changes made by the GPOC, the consultants, City staff, Planning Commission, and City Council since the IGPs report of January 21, 1997. The Preferred Alternatives Report was reviewed by the City Council on August 6, and with their comments in hand, the consultants began drafting the General Plan and an environmental impact report.

This Draft General Plan is the outcome of a process which began with the Task Force (1992-93) and the Work Program (1994). It is a process in which the General Plan Oversight Committee (GPOC) held more than one hundred meetings and, with public participation, identified the Goals, Policies, and Programs (GPPs) which are the heart of this General Plan.

4. ORGANIZATION OF THE PLAN

GOALS, POLICIES, AND PROGRAMS

“Goals” are “end-state”; they are the long-range answers to what the City wants to accomplish to resolve a particular issue. Policies are medium- or short-range statements that guide day-to-day decision-making so there is continuing progress toward the attainment of goals. Programs are the actions taken to implement a specific policy or group of policies. The hierarchy of *goal*, *policy*, and *program* is outlined below.



GOAL:	A general, overall, and ultimate purpose, aim, or end toward which the City will direct effort.
POLICY:	A specific statement of principle which implies clear commitment but is not mandatory. A general direction that the City elects to follow, in order to meet its goals.
<i>Program:</i>	An action, activity, or strategy carried out in response to adopted policy or group of policies.

Explanatory text appears before and after some of the goals, policies, and programs but is not part of the goal, policy or program.

FOUR CHAPTERS

The Benicia General Plan is organized into four chapters, a glossary, an Appendix, and a Technical Appendix. The chapters are 1: Introduction; 2: Community Development and Sustainability; 3: Community Identity; and 4: Community Health and Safety.

Chapter 2 includes four sections:

- Land Use defines the ultimate building envelope” for the City, and establishes the overarching goals for the community’s development. Land Use also defines the seventeen land use categories used in the General Plan and identifies those properties where changes occurred to the prior (1993) General Plan land uses.
- Economic Development addresses land development in all the business and commercial sectors of the City.
- Circulation looks at how freeways affect Benicia, in-town traffic, and mass transit.
- Community Services discusses public facilities and provision of public services.

Chapter 3 covers three topics:

- Historic and Cultural Resources addresses preservation of historic areas and building community spirit.
- Visual Character deals with maintaining Benicia’s small town atmosphere, preserving scenic views, and enhancing the City’s appearance.

- Open Space and Conservation of Resources focuses on protection and enhancement of the natural environment including open space, water and air, and plants and animals.

Chapter 4 contains four sections:

- Healthy Communities promotes ways to live more healthfully.
- Hazards to the Community identifies dangers to the community per the State-mandated safety element.
- Responses to Hazards contains the community's emergency response plans and the safety goals, policies and programs.
- Noise focuses on the sources and effects of sounds in the community, per the State-mandated noise element.

The Benicia Housing Element (1993) is a stand-alone document, but is part of this General Plan and should be consulted accordingly. The Housing Element contains the City's goals, policies and programs related to the maintenance and development of housing in Benicia.

DIAGRAMS

The City's land use diagram, which is attached separately at the back of this document, is an integral part of the General Plan. The diagram graphically expresses the Plan's development policies by showing the desired arrangement and location of land uses. The diagram is required to be consistent with the General Plan text (and its goals, policies, and programs).

In keeping with past practice, the City of Benicia has again prepared a site-specific land use diagram to avoid confusion about designations for individual parcels. While the boundaries between land use districts usually follow property lines or streets, the land use diagram should not be used to calculate parcel acreages or lot size dimensions. The Assessors' Parcel Books can be used for that purpose.

The land use diagram and the general plan text together specify the "population density" (number of people and dwelling units per net acre) of residentially-designated land and the "building intensity" for all other designations. Building intensity is expressed in terms of floor area ratio (FAR), which is the ratio of gross floor area to the total site area. The land use diagram also shows the location of existing and proposed parks, public schools, and other municipal services.

The circulation diagram shows current and proposed arterials, collectors, and local streets, as well as bikeways and rail lines. The roadway system has been tested against the planned level of development and has been found to be adequate. More discussion about the relationship between land use and circulation is found in Chapter 2C of this General Plan.

Together, the land use and circulation diagrams illustrate the managed growth of the City for the next 15 to 20 years. The General Plan also contains other diagrams to illustrate the policies and programs in the Plan.

APPENDIX

The Appendix contains information on Growth Management and Hazardous Substances. While important to a thorough understanding of the General Plan, the Appendix is not adopted as policy by the City.

TECHNICAL APPENDIX

A separate document, the Technical Appendix, contains background material used in preparing the General Plan. This material provided an essential foundation for formulating issues, goals, policies, and programs. While important to a thorough understanding of the General Plan process, the Technical Appendix is not adopted as policy by the City. Anyone wishing to review the Technical Appendix may do so at the Planning Department in City Hall or at the public library. A list of the Background Reports contained in the Technical Appendix:

Table 1-1. Background Reports in the Technical Appendix

1. Audit of 1993 General Plan	November 13, 1995
2. Community Survey Report	May 1996
3. Cultural Resources	August 23, 1996
4. Economic and Fiscal	February 26, 1996
5. Healthy Communities	February 26, 1996
6. Historical and Archaeological	March 5, 1996
7. Housing and Demographics	January 11, 1996
8. Land Use	April 1, 1996
9. Natural Resources	January 17, 1996
10. Noise	February 14, 1996
11. Public Safety	February 28, 1996
12. Transportation	May 3, 1996
13. Urban Design	April 4, 1996

Table 1-2. Relation of General Plan Chapters to State-mandated Elements

MANDATED ELEMENTS	GENERAL PLAN		
	Chapter*	Pages	
LAND USE ELEMENT	Population Density & Building Intensity	2	23-31
	Land Use Diagram	2	Rear Pocket
	Distribution of Housing, Business, Industry, and Open Space	2	Rear Pocket
	Distribution of Recreation Facilities, Educational Facilities, and Public Buildings	2	Rear Pocket
	Flood Areas	4	148-150
	Mineral Resources	3	137-139
	Implementation	2	32-35, 41-51, 67-77, 84-87 89-90, 92-95
CIRCULATION ELEMENT	Description of Existing System	2	52-66
	Diagram of Existing System	2	54, 56
	Description of Proposed System	2	58-65
	Diagram of Proposed System	2	54, 56
	Utilities	2, 4	90-91, 154-156
	Implementation	2	67-76, 168
CONSERVATION ELEMENT	Water, Rivers, Harbors	2, 3	90, 122-124, 129
	Forests	3	130
	Soils	4	137, 145-148
	Mineral Resources	3	137
	Implementation	2, 3	92-94, 133-134 136, 138
OPEN SPACE ELEMENT	Description	3	122-125
	Trails System	2, 3	80, 124-125
	Management of Resources	2, 3	90-91, 135, 137
	Areas for Outdoor Recreation	2, 3	79-83
	Preservation for Public Health, Safety	3	147, 149 150, 152
	Implementation	2, 3	84-86, 125-127 133-134, 136

Table 1-2. Relation of General Plan Chapters to State-mandated Elements (continued)

MANDATED ELEMENTS		GENERAL PLAN	
		Chapter*	Pages
SAFETY ELEMENT	Seismic Risk	4	145-146
	Slope Instability/Geologic Hazards	4	146-148
	Flooding	4	148-151
	Fire Hazard	4	151
	Emergency Response/ Evacuation Routes	4	158-159
	Hazardous Materials	4, G	151-153, G1-G18
	Implementation	4	160-169
NOISE ELEMENT	Noise Sources and Problems	4	170-172
	Noise Contours	4	173, 175
	Noise Attenuation	4	176, 178
	Implementation	4	179-180

* Letters refer to the Appendices

5. IMPLEMENTING, UPDATING, AND AMENDING THE GENERAL PLAN

ADMINISTERING THE GENERAL PLAN

Once adopted, a general plan does not remain static. State law permits up to four general plan amendments per mandatory element per year (Government Code §65358[b]). Most amendments propose a change in the land use designation of a particular property which equates to a change to the land use element. As time passes, the City may decide that it also is necessary to revise portions of the text to reflect land use diagram changes or other changing circumstances or philosophy.

While some degree of flexibility is desirable in the planning process, basic to its very existence is that it possess some degree of stability. Without the expectation of stability, it cannot serve as a comprehensive and long-term guide to local development. Therefore, although the City may decide to amend this plan, the primary position of the City will be to implement it as adopted. This will honor both the principle of stability and the extraordinary degree of community participation that went into the formation of the plan.

Generally it is recommended that the City comprehensively review the Plan every five years to determine whether it is still in step with community values and conditions.

ANNUAL REVIEW BY PLANNING COMMISSION

State law provides direction on how cities can maintain the plan as a contemporary policy guide: Government Code §65400[b] requires each planning agency to report annually to the Office of Planning and Research and the California Department of Housing and Community Development (HCD) on “the status of the plan and progress in its implementation, including the progress in meeting its share of regional housing needs determined pursuant to Section 65584...”. In addition, the planning agency is required annually to review the City’s Capital Improvements Program for consistency with the General Plan (Government Code §65103[c]).

AMENDING THE PLAN

Anyone wishing to amend the General Plan would follow the procedure generally outlined below. (More detailed information on processing and timing is available from the Planning Department.)

1. Prior to filing an application, the prospective applicant should discuss the proposed amendment with City staff. This will clarify the process and identify any concerns the City may have about the proposed changes.
2. The next step in the process is to file an official application with the Planning Department and pay any necessary processing fees. An application must include a development plan of sufficient detail that potential environmental effects could be ascertained.
3. City staff reviews the application for completeness and then schedules it for a public hearing before the Planning Commission. A public notice is sent to all property owners within 300 feet of the subject property and a legal notice is also placed in the official newspaper.
4. The Planning Department staff will prepare a report for the Planning Commission which discusses the proposed amendment, any environmental effects that may result from the amendment, and any comments received from City departments or outside agencies. The report advises the Planning Commission whether it should recommend the amendment to the City Council for approval or denial.
5. The amendment is then set for public hearing before the City Council, accompanied by another staff report and the Planning Commission recommendation.

6. RELATION TO OTHER PLANS

As part of the General Plan update, a number of plans and studies were examined and reviewed. The General Plan Task Force Report (item 1), the two Conservation Plans (items 2 and 3), and the Economic Development Strategy (item 4) were among the more influential documents in setting the scope and tone of the general plan update process.

Table 1-3. List of Other Plans and Documents Examined

Plan or Document	Date
1. General Plan Task Force Report	December 1993
2. Downtown Historic Conservation Plan	November 1990
3. Arsenal Historic Conservation Plan	November 1993
4. Economic Development Strategy, Benicia Economic Development Board	January 17, 1995
5. Benicia Industrial Design Guidelines	March 10, 1989
6. Preliminary Master Circulation Study	August 1990
7. Citywide Traffic Improvement Funding Report (Omni Means)	January 1992
8. Water System Master Plan	November 1990
9. SkyValley Benicia Specific Plan	April 10, 1992
10. Benicia Zoning Ordinance (as amended):	May 1994
11. Benicia Subdivision Ordinance	November 1993
12. Parks, Trails, and Open Space Master Plan	June 1994
13. Benicia State Park Recreation Area	June 1991
14. Benicia Capitol State Historic Park	June 1991
15. Benicia/Solano County Economic/Community Profile	August 1995
16. Tri-City and County Open Space Plan	March 1994
17. Gateway to the Inland Coast: The Story of the Carquinez Strait	1996
18. Carquinez Strait Resource Plan	September 1997
19. Delta Estuary, California's Inland Coast	May 1991
20. Solano County Land Use and Circulation Element	July 1994
21. Solano Congestion Management Program	November 1993
22. Bay Area Ridge Trail Plan	1992
23. Bay Trail: Planning for a Recreational Ring Around San Francisco	1989
24. Special Area Plan - Tri-City and County Regional Park and Open Space Preservation Plan	1994
25. Waterfront Plan	1975
26. Special Area Plan for Waterfront Area	1977
27. Urban Waterfront Restoration Plan	1980

B. REGIONAL SETTING

1. LOCATION IN THE REGION

Benicia is approximately 35 miles northeast of San Francisco and 57 miles southwest of Sacramento. It lies on the north shore of the Carquinez Strait, where the combined flow of the Sacramento and San Joaquin rivers have cut a deep gorge through the coast range. The Strait is a crucial link in Northern California's inland waterway, connecting San Pablo Bay and San Francisco Bay to the west with the Sacramento and San Joaquin river delta to the east. Through the Strait, ocean-going ships can reach the Port of Benicia, or can continue on to the Central Valley ports of Sacramento and Stockton.

The city is built on a peninsula of land that reaches south from the main body of Solano County and creates a prominent bend in the Carquinez Strait. From this peninsula, highway and railroad bridges span the Strait to connect Benicia with the Contra Costa County cities of Martinez and Concord. This is the one place where both trucks and railroad cars can cross the San Francisco Bay/Sacramento River waterway. The rail line and I-680 provide easy access to Benicia from the north and south; I-780 (which the city straddles) provides access from the west.

Although part of Solano County, Benicia is closely linked to Contra Costa County across the Strait. Views from Benicia encompass the Strait, the foothills of northern Contra Costa County, and Mt. Diablo in the distance. Many Benicia residents work and shop in Contra Costa County.



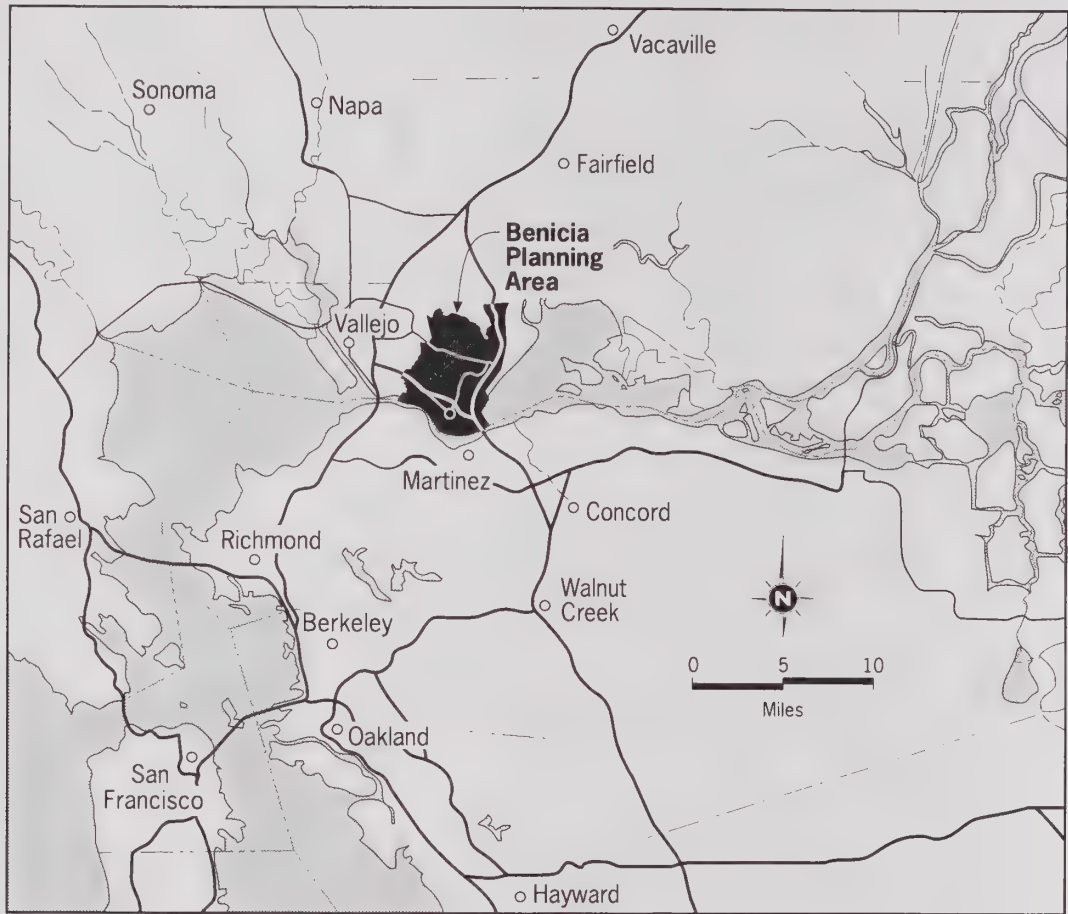


Figure 1-1. Regional Setting

2. PHYSICAL SETTING

The Planning Area is made up primarily of rolling hills, rising to an elevation of 1,160 feet. On the west boundary, Sulphur Springs Mountain reaches approximately 950 feet. Two major drainages—Sulphur Springs Creek in the west, and Paddy Creek in the east—run approximately north-south through the Planning Area. The flow from Sulphur Springs Creek is contained by Lake Herman before being joined by Paddy Creek and continuing into the Benicia Industrial Park.

The rolling hills reach almost to the shoreline; very little of Benicia is flat. (See Figure 1-2.) On the southern margins of the city, the land slopes gently down to the Carquinez Strait. Most of the older residential areas and the Downtown are here. The eastern city limits are bordered by the marshlands of Suisun Bay. Relatively flat areas adjacent to the marshes provide sites for industry. At the southwestern boundary of the Planning Area, another flat, marshy area has been preserved as the Benicia State Recreation Area.

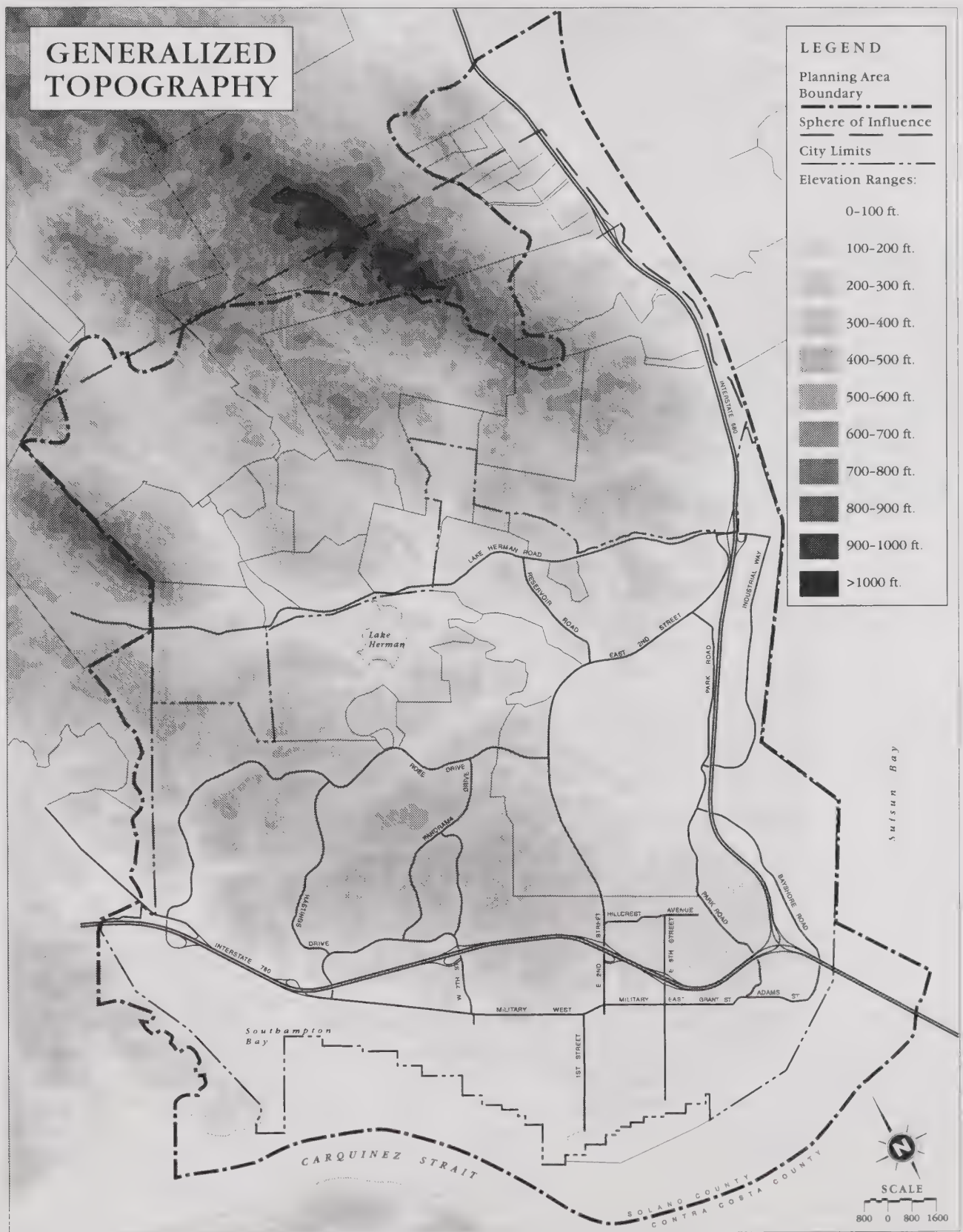


Figure 1-2. Generalized Topography

Several key natural features have influenced the pattern of existing development:

- The Carquinez Strait and Suisun Bay, which provide an extensive, accessible shoreline that is bracketed on both east and west by marsh preserves. The shoreline is divided between residential, recreational, and industrial uses.
- Low hills above the Downtown that interrupt lines of sight to the newer development in the hill areas north of I-780. This interruption creates separate “visual basins”—contributing to the small town feel and scale of Benicia. The topography frames a “water-oriented” area containing the Downtown, central Benicia, and portions of Southampton which lie below the main ridgeline.
- Steep hillsides, high promontories, and canyons north of the main ridgeline facing the Carquinez Strait that define three distinct areas: (1) an “upland” area directly behind the main ridgeline, which is largely developed; (2) the “lake” area where the hills slope inward towards Lake Herman; and (3) a “northern” area comprised of the watershed of Sulphur Springs Creek, which until the early 1990s was considered for residential development.
- A pronounced terrace, directly in line with the Benicia-Martinez Bridge, that separates the northbound and westbound freeways. This terrace defines two distinct industrial areas: community uses and import-export activities to the southwest, and major industrial uses to the northeast. The northeast industrial area is also contained by the hills below Lake Herman Road to the north, the slopes above East Second Street to the west, and Suisun Bay to the east.

GATEWAYS

Benicia’s identity is strengthened by the experience of entering the city through distinct gateways: four by land and one by water. Each of these gateways provides a different view of the city:

Lake Herman Road:	Provides the visitor with views of the lake and rolling hills. Arriving from this direction the newcomer might see Benicia as largely undeveloped.
Northern Gateway:	On I-680 at Lake Herman Road. Presents Benicia as an industrial city to visitors passing through the heart of the industrial park.
Southern Gateway:	Crossing the bridge from Martinez on I-680, shows Benicia as a Bay Area crossroads, where major rail and highway crossings link the two shores of the Carquinez Strait.
Western Gateway:	On I-780, introduces the traveler to the green marshlands in the Benicia State Recreation Area and water-oriented housing.



Marina/Port Gateway: Welcomes those coming by small boat or by ship and provides a waterfront view of Benicia revealing its small town “human scale” and historic character.

The view from each of these gateways is influenced both by topography and land use. Whether Benicia is seen as a city of industry, open space, or residential neighborhoods can depend on the vantage point of the observer. Future development near each of these gateways will have important effects on the image of Benicia. (See Figure 1-3.)

C. THE PLANNING AREA

1. PLANNING AREA BOUNDARY

Benicia’s Planning Area—established for this General Plan—covers an area of over 15,000 acres—about 24 square miles. (See Figure 1-4.) This Planning Area generally corresponds to Benicia’s Sphere of Influence (SOI), the area designated by the Solano County Local Agency Formation Commission (LAFCO) as the probable ultimate physical boundary and service area of the city. Along the northern border of the SOI, however, the planning area extends only to the southern boundary of the Tri-City and County Open Space Area.

North of the city limits, the Planning Area encompasses 6,392 acres of generally undeveloped rolling hills. The Planning Area boundary deviates from the Sphere



Figure 1-3. Gateways

of Influence boundary to include a small area east of I-680 and to follow the boundary of the Tri-City and County Open Space on the north, rather than the straight line drawn by LAFCO. Much of this land is used for cattle grazing or open space. The eastern portion of the Planning Area includes a 242-acre Class I hazardous waste disposal site which is being prepared for permanent closure.

The Planning Area also includes a portion of Sulphur Springs Mountain, which has been designated as a Mineral Resource Area. However, Syar Quarry is outside of the Benicia Sphere of Influence, and the Planning Area.

2. CITY LIMITS

Benicia's 1995 City limits covers a total of 14 square miles, including about 1.2 square miles of open water and 12.8 square miles of land. The land area also includes some areas of seasonal or permanent wetlands. Nearly all of the existing residential, commercial, and industrial development in the Planning Area is located within the City limits. Approximately 53 percent of the land within the City was developed as of 1995.

3. AREAS OF INTEREST

The City has identified several Areas of Interest outside the SOI that have a direct physical and social influence on the City's planning but are not considered for annexation: (1) the Benicia-Vallejo buffer area adjoining Benicia's west City Limits, between I-780 and Lake Herman Road; (2) an area adjacent to and west of the Benicia State Recreation Area; (3) an area between the railroad line and I-680 and north of Lake Herman Road; and (4) the Carquinez-Strait region. The City has included these areas in its Planning Area and will request that it be notified of all planning decisions affecting these "Areas of Interest."

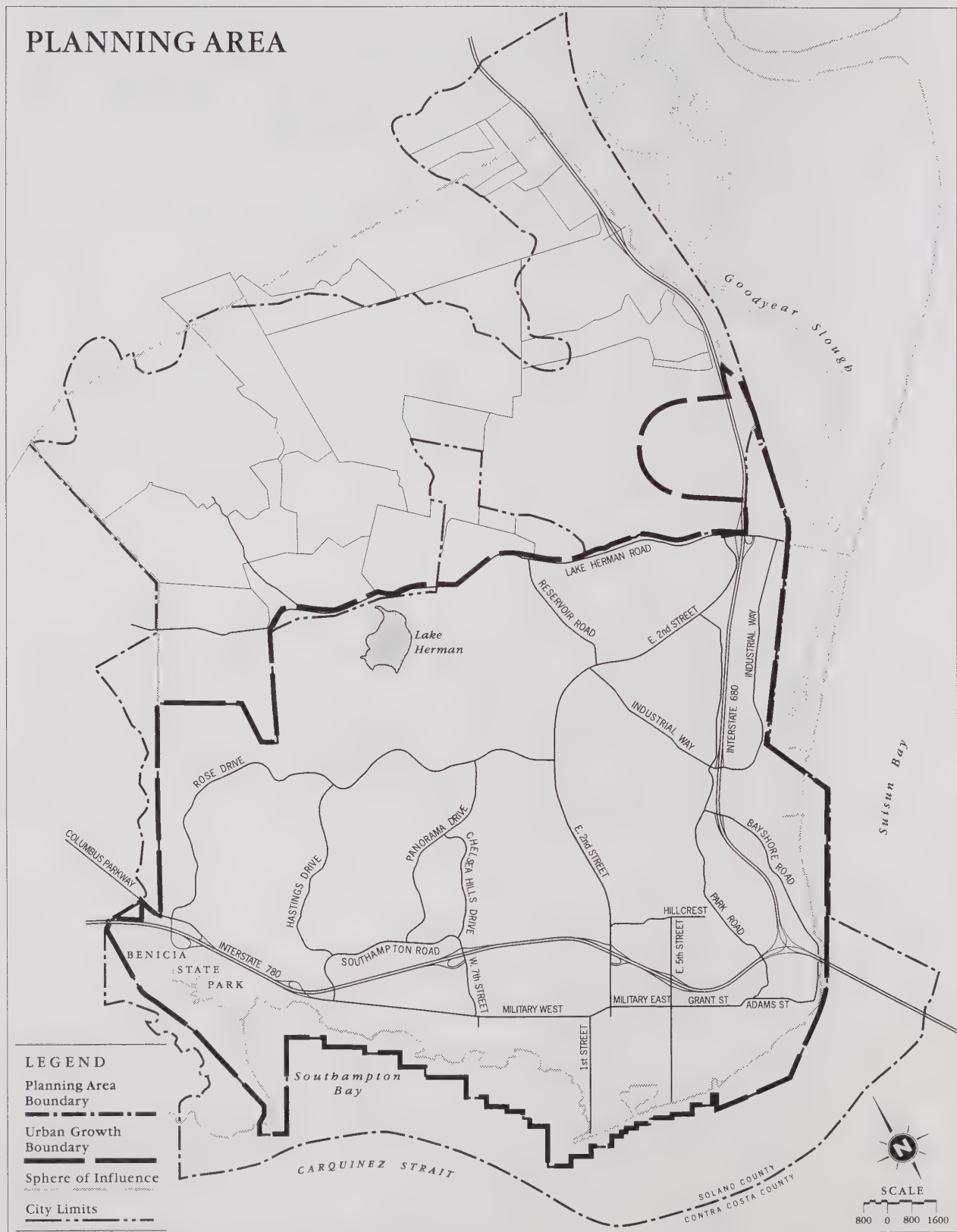


Figure 1-4. Benicia Planning Area

2. COMMUNITY DEVELOPMENT AND SUSTAINABILITY

Community development and sustainability are at the heart of the goals developed in this General Plan. *Community development* refers to all aspects of development including: (1) new residential and commercial development, such as new housing or an office building; (2) economic development such as jobs, income, fiscal health, and expansion and attraction of businesses; and (3) relationships between different areas of the city and how those areas serve the needs of the community. *Sustainable development* has become a popular planning expression used abundantly but often not understood. Sustainable development represents an approach to community development that Benicia residents and businesses want to achieve with this General Plan. A brief definition of sustainable development is provided below.





WHAT IS SUSTAINABLE DEVELOPMENT?¹

One of the first governing bodies in the United States to develop a definition for sustainable development that fits the vision of this Plan was the Minnesota State legislature. They define sustainable development as that which “maintains or enhances economic opportunity and community well-being while protecting and restoring the natural environment upon which people and economies depend. Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.”

“Sustainability” in this General Plan conveys long-term interdependent economic and environmental goals that promote efficient land use. It is a way of thinking and acting responsibly with respect to environmental, social, and economic issues at ever-widening levels of awareness or “integration.” That is, what is done at the project or local level can affect all levels of the environment, including the local community, neighboring regions, the country, and the world.

Sustainable development implies urban areas that reflect a long-term economic horizon; result in efficient land use patterns that are not overly energy-intensive; have sufficient linkages to the local and regional economy to assure long-term job creation and economic vitality; support ecologically sensitive design features; and value the public realm.

The concept of creating a sustainable community in Benicia is a primary goal and objective of the General Plan. The concept affects all chapters of the Plan and all aspects of the community. While it is assumed that this Plan cannot radically change the nature of Benicia, the goal and intent is to create a more livable and sustainable community over time.

¹ This definition is taken in part from “Sustainable Development: Concept Definition, Urban Development Principles, and Stapleton Opportunities and Constraints” prepared for the Stapleton Redevelopment Foundation by Economic & Planning Systems, Inc. (January 1994).

A. LAND USE AND GROWTH MANAGEMENT

The primary function of this section is to designate land for specific types and amounts of development and to set the overall development framework for the City. Areas of the City are generally categorized according to their suitability for residential, commercial, industrial, or public/quasi-public use. In addition, the City has designated land for open space that should not be developed because of its importance for health, safety, agriculture, or recreation.

The land use section provides background information on the location and extent of existing land uses in Benicia, defines each land use category used in the plan, and describes the changes that this plan makes to the 1993 General Plan. A land use plan map covering the entire planning area is provided in the back pocket of this document and is adopted as City policy as part of this General Plan.

The Growth Management section establishes the overarching goals for development in Benicia. It defines and seeks to preserve those characteristics that make Benicia a truly unique and special place.

LAND USE

The pattern of general plan land uses is reflected in the pocket diagram at the back of the document. The largest category is industrial (31%), followed closely by parks/open space (25%) and residential (21%). Non-industrial/commercial uses represent a relatively small portion (3%). This pattern indicates the community's priorities in terms of types of land uses within the city limits. The new general plan slightly shifts the existing pattern of land use in the northern area toward

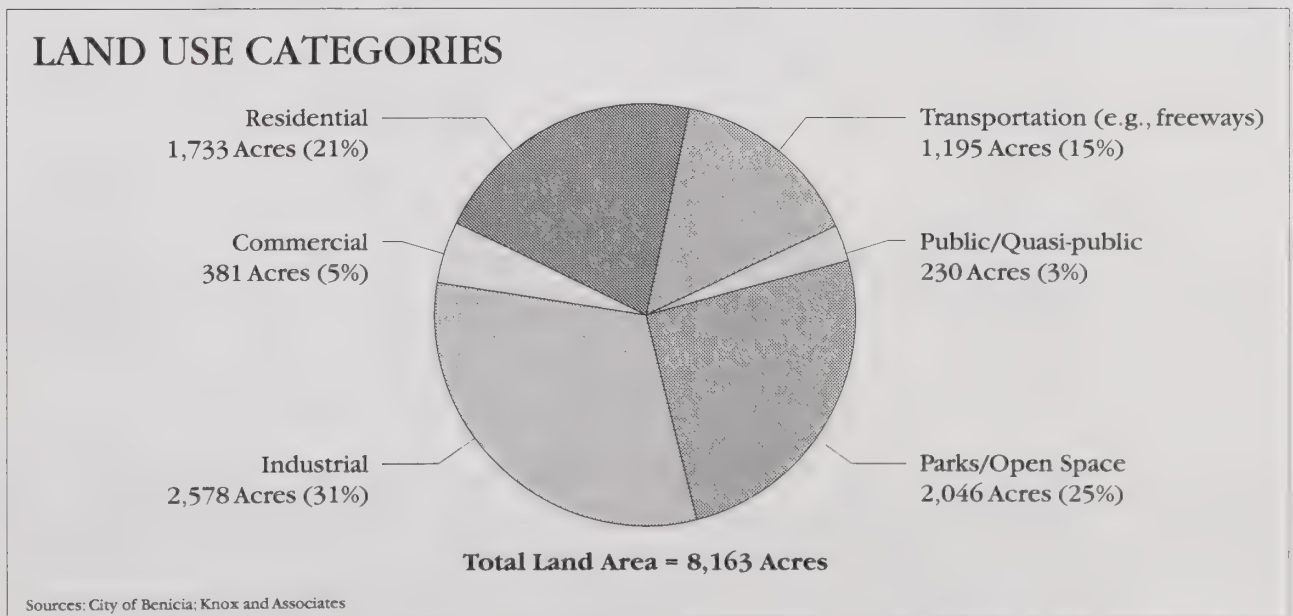


Figure 2-1. General Plan Land Use Categories Within City Limits

more open space (refer to Appendix B - Land Use Changes). This reflects the community's desire to contain development and grow at a slower rate.

It is the intent of this General Plan that land be used efficiently to reduce traffic, preserve land at urban fringes, reduce infrastructure costs, and minimize the loss of farmland, wetlands, and open space. By doing these things, it is hoped that Benicia can avoid the costs of sprawl and erosion of the quality of life.

For each category of land, the General Plan must establish standards of population density and building intensity. For residential land, the Plan will stipulate densities in housing units per gross acre. Potential population density will be obtained by multiplying the number of units per acre by the number of persons per unit (three persons/unit for low density, two persons/unit for medium and high density. In the event of a discrepancy between residential units per acre and persons per acre, the unit density—and not the population density—will govern.)

For nonresidential uses, the Plan specifies a maximum Floor Area Ratio (FAR), calculated as the ratio of gross floor area to site area.

The specific uses mentioned in each definition of the land use categories are intended to be general and illustrative (as opposed to specific and all-inclusive).

1. RESIDENTIAL LAND

The General Plan has three residential land use categories. Each of the General Plan residential land use designations is intended to correspond to a specific zoning described in the Benicia Zoning Ordinance.

Table 2-1. Zoning District Equivalents for General Plan Residential Land Use Categories

GENERAL PLAN CATEGORY	ZONING DISTRICT	DENSITY RANGE (UNITS/ GROSS ACRE)	DENSITY RANGE (PERSONS/ GROSS ACRE)
Low Density	RS	0.1–7	0.3–21
Medium Density	RM	8–14	16–28
High Density	RH	15–21	30–42

Source: City of Benicia

The City may apply a lower density in certain cases (for example, if environmental constraints make it physically impossible to construct the minimum density in a given land use category). Densities higher than the upper limit can be achieved through the use of density bonuses for lower-income housing. This applies to any development with a residential component.



Table 2-2. Residential Land Within City Limits in Gross Acres, as of 1995

DENSITY	DEVELOPED LAND	VACANT LAND
Low Density	1,156	145
Medium Density	275	8
High Density	144	5
Residential Total	1,575	158

Source: City of Benicia; Knox & Associates

LOW DENSITY RESIDENTIAL



This category provides for single-family detached residences in residential neighborhoods. The density range permitted in the Low Density category is 0.1 to 7 units per gross acre.

MEDIUM DENSITY RESIDENTIAL



This category includes multifamily housing where lot coverage remains relatively low. It includes large older homes that have been converted to duplexes as well as new apartments, townhouses, condominiums, clustered housing developments, and mobile home parks. Compared to Low Density, the Medium Density land use category permits more people to be housed on a given land area and also provides more flexibility

in the location and arrangement of buildings than is possible in most single-family detached developments. The density range permitted in the Medium Density category is 8 to 14 units per gross acre.



HIGH DENSITY RESIDENTIAL

This category permits a density range of 15 to 21 units per acre. High Density Residential is intended to increase housing opportunities by permitting more housing to be built on a parcel(s).

2. COMMERCIAL LAND

The Benicia General Plan separates commercial land into five categories:

(1) Community Commercial (previously called Neighborhood Commercial), (2) General Commercial, (3) Downtown Commercial, (4) Waterfront Commercial, and (5) Business and Professional Office. Each of these categories is intended to accommodate a particular scale and intensity of commercial use and corresponds to a particular zoning category. Each category has a permissible floor area ratio (FAR) and restrictions on uses. Table 2-3 shows the breakdown of commercial land into these five categories.

Table 2-3. Commercial Land (in gross acres) Within City Limits, as of 1995

CATEGORY	FAR	DEVELOPED LAND	VACANT LAND
Downtown	2.0–2.4	19	5
General	1.2	51	102
Community (formerly “Neighborhood”)	1.2	6	0
Office	0.8–1.2	16	6
Waterfront	0.8–1.2	8	8
Commercial Total		101	280

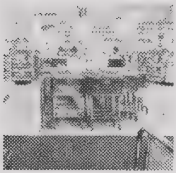
Source: City of Benicia; Knox & Associates



DOWNTOWN COMMERCIAL

This category encourages a wide variety of retail businesses, restaurants, and lodging is encouraged. Offices and residences are encouraged above the first floor in order to establish a greater variety, intensity, and efficiency of use.² A higher intensity of development Downtown is envisioned by permitting a maximum FAR of 2.4—higher than in the other commercial districts. The 2.4 FAR, however, is permitted only if housing is included; the maximum non-residential FAR is 2.0.

² Resolution No. 87-31, 2/17/87



GENERAL COMMERCIAL

This category is intended to provide shopping and services for the community as a whole and for visitors coming from the freeways. Solano Square, Southampton Center, and Parkway Plaza are designated General Commercial. A small commercial center at East Fifth Street and Military East is also designated General Commercial to provide for auto service and parts, retail sales, and similar uses. General Commercial is intended to allow a wide range of commercial development, with the intensity of development limited by a maximum FAR of 1.2.



COMMUNITY COMMERCIAL

This category (previously called Neighborhood Commercial) is intended to apply to convenience commercial centers which are limited in size. Uses include retail and quasi-public uses. Community Commercial is the most restrictive of the commercial categories and has a maximum FAR of 1.2.



BUSINESS AND PROFESSIONAL OFFICES

This designation is intended to allow small-scale offices to serve as a buffer between residential uses and more intensive commercial areas. Offices in this category typically generate lower traffic volumes than offices in other commercial or industrial districts. A maximum FAR of 0.8 is allowed (increased to 1.2 if housing is included).



WATERFRONT COMMERCIAL

This category is intended to accommodate development with both a water orientation and historic character to create a pedestrian-scale commercial and residential area. Multifamily residences and live/work spaces are permitted in Waterfront Commercial. The commercial component is restricted to retail shops and services that directly support marina and boating activities or restaurants overlooking the water. A maximum FAR of 1.2 is permitted for projects that include housing above the ground floor; otherwise the FAR is limited to 0.8.

3. MIXED USE



DOWNTOWN MIXED USE

This category includes residential, retail, office, public and quasi-public uses. Its purpose is to encourage a mix of compatible uses adjacent to the Downtown, upgrading of existing buildings, preservation and adaptive reuse of historic buildings, and introduction of new, compatible mixed use buildings. "Mixed use" includes the mixing of permitted activities within the same building or within separate buildings on the same site or on contiguous sites. Design standards will be developed to ensure that mixed use development is compatible with and contributes to the character of the street, the Downtown, and adjoining neighborhoods. The Downtown Mixed Use category permits a maximum FAR of 2.0.



LOWER ARSENAL MIXED USE

This category includes residential, live/work, office, retail, public and quasi-public, and limited industrial uses. The purpose of this category is to continue to encourage a mix of compatible uses in areas of the Lower Arsenal; to promote the upgrading of existing buildings, and the preservation and adaptive reuse of historic buildings; and to allow new, compatible buildings to house mixed use. The Lower Arsenal Mixed Use category permits a maximum FAR of 2.0.

4. INDUSTRIAL LAND

Before 1987, industrial land was designated either Heavy Industrial or Light Industrial. Since 1987, Benicia's industrial land has been divided into three General Plan Land Use categories: (1) General Industrial; (2) Limited Industrial; and (3) Water-related Industrial. Table 2-4 shows how the industrial land is divided among these categories.

Table 2-4. Industrial Land (in acres) within City Limits, as of 1995

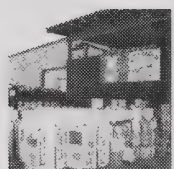
CATEGORY	FAR	DEVELOPED LAND	VACANT LAND
General Industrial	0.7	1,006	714
Limited Industrial	0.7	29	559
Water-related	0.7	178	92
INDUSTRIAL TOTAL		1,213	1,365

Source: City of Benicia; Knox & Associates



GENERAL INDUSTRIAL

The General Industrial land use category is the least restrictive of the three categories and is intended to allow a great deal of flexibility for industrial development. Over half of the Benicia Industrial Park is designated General Industrial. This includes nearly all of the Industrial Park north of I-780 and east of East Second Street. This category includes manufacturing, assembly, and packaging of goods and products from extracted, raw, and previously prepared materials and related industrial and commercial services. The maximum FAR permitted in this category is 0.7.



LIMITED INDUSTRIAL

This category includes manufacturing, assembly, and packaging of goods primarily from previously prepared (not raw) materials; wholesale, distribution, and storage facilities (including auto import, export, and storage); research and development facilities; and related industrial and commercial services. As it pertains to refining-related activities, this category also includes such uses as: fabrication areas, packaging

facilities (dry and liquid), quality control laboratories, and refining accessory uses such as maintenance shops, storage areas, shipping/distribution facilities and offices.

Several areas of the Benicia Industrial Park which border other types of land use are designated Limited Industrial to provide a buffer between the General Industrial areas and the rest of the City. Lower levels of traffic—particularly from heavy trucks—are expected in the Limited Industrial areas than in the General Industrial category. The Limited Industrial category permits a maximum FAR of 0.7.

WATER-RELATED INDUSTRIAL



This category includes port terminals and water-dependent, related industrial uses such as warehousing and storage; support transportation services; and ship maintenance and repair. The Water-related Industrial category is intended to protect the Port of Benicia from intrusion by non-water-dependent uses, to promote its long-term development, and to provide back-up land for port-related activities. The Water-related Industrial category permits a maximum FAR of 0.7.



5. PUBLIC AND QUASI-PUBLIC LAND

This category is intended to provide for a variety of uses serving the public including education, police, fire, water, and sewer. (Park and recreation facilities are included as a separate category under Open Space.) The Public/Quasi-public land use category allows facilities for City administration, safety, and health services; public and private schools; public utilities; and other public/quasi-public facilities. Facilities serving the public are scattered throughout the city. (Refer to Table 2-5 on the following page).

The maximum FAR for public/quasi-public facilities is established on a case-by-case basis through the use permit process of the Benicia Zoning Ordinance. If a use permit does not set a maximum FAR, then the maximum FAR of the abutting zoning district applies.

6. OPEN SPACE

State planning law requires cities to plan for “open space for the preservation of natural resources, the managed production of resources, outdoor recreation, and public health and safety.” The General Plan Land Use Diagram (found in the back pocket of this Plan) recognizes three categories of open space to meet these requirements:

Table 2-5. Existing Public and Quasi-public Facilities Within City Limits, 1995

FACILITY	ACREAGE
Administration	
City Hall	3.0
Post Office	1.9
School District Offices	6.0
Cultural/Recreational Facilities	
Library	0.8
Senior Center	0.3
Girl Scout House	0.5
Boy Scout House	0.5
Swim Club (Private)	1.6
Clocktower, Commandant's House	7.0
B.D.E.S. Meeting Hall	0.5
Public Access Trails	6.9
Tennis Court	0.3
Veteran's Hall	0.5
Municipal Utilities	
Water Treatment Plant	30.0
Sewage Treatment Plant	7.0
Corporation Yard	7.0
Building Maintenance Yard	0.2
Public Safety	
Police Station (part of City Hall complex)	
Fire Station #1	0.5
Fire Station #2	0.6
Public Schools	
Elementary	44.4
Benicia Middle School	18.7
Benicia High School	35.0
Private School	2.0
Child Care Centers	2.4
Churches	25.4
Cemeteries	32.7
Other Facilities	10.5
Total Public/Quasi-Public	246.2

Source: City of Benicia; Knox & Associates

MARSH

"Marsh" permits only educational and scientific research, low impact hiking, fishing, bird-watching, and similar activities offering public access to the shoreline.

GENERAL OPEN SPACE

General Open Space includes urban open space (such as publicly-owned open space, land dedicated for permanent open space in residential subdivisions, and open space for public health and safety, such as hillsides with slopes over 30 percent); open space for managed production of resources (such as mineral resources); and open space for conservation of natural resources (such as the Lake Herman watershed). Allowable open space uses include agriculture, horticulture, active and passive recreation, and mineral extraction in State-designated mineral resource areas only.

PARKS

Parks provide land for the more intensive recreational uses. There are three park types in Benicia.

Regional Park: A Regional Park generally serves one or more communities and accommodates a variety of activities designed to enhance the use and experience of the natural environment. Uses may include trails, nature centers, picnic areas, and camping, if appropriate.

Community Park: A community park is designed to serve several neighborhoods. Community parks should accommodate a wide variety of activities and meet the needs of diverse users.

Neighborhood Park: A neighborhood park is designed to serve a residential population in close proximity to the park. Neighborhood parks should accommodate a variety of activities including playground activities, picnicking, and lawn games.³

Table 2-6. Park Standards

PARK TYPE	ACRES/1,000 PEOPLE	SERVICE AREA	SIZE (ACRES)
Regional Park	10.0	One hour travel	250–1,000
Community Park	2.5	Within 3 miles of all residences	30–100
Neighborhood Park	3.5	Within 1/2 mile of all residences	2–15

Source: Benicia General Plan, 1993; Parks, Trails and Open Space Master Plan, Revised 1994

³ Parks, Trails, and Open Space Master Plan, pp. 3-1 through 3-3.

GROWTH MANAGEMENT

The preceding pages describing the different land use categories and changes set the stage for how Benicia is to develop over the next 15-20 years. The Growth Management section creates the connection between land uses and growth by establishing the overarching goals, policies and programs for development in Benicia.

To reinforce these policy statements the plan defines an urban growth boundary (refer to Figure B-1.)

Urban Growth Boundary (UGB) is coterminous with the city limit line around the property at the end of Bantry Way (Zocchi property) to Lake Herman Road; it then follows Lake Herman Road east to Interstate 680. At Interstate 680, the boundary turns north along the freeway, then west around the area identified as Area 9 on the Land Use Changes diagram. It then continues north on Interstate 680, then turns east at the north end of Goodyear Road to the Planning Area Boundary.

The Urban Growth Boundary is an officially adopted and mapped line that separates the City's urban area from its surrounding greenbelt of open lands. It is a growth management tool that seeks to contain, control, direct, or phase growth in order to promote more compact, contiguous urban development. No urban development is allowed beyond the UGB except for public parks and public or private recreation uses that generally do not require substantial urban facilities or services. Religious assembly and other public/semi-public uses may be allowed by use permit.

Benicia's UGB reflects the City's commitment to focus growth and prevent urban sprawl. It recognizes the City's limited ability to extend services (i.e., sewer, water, police, *etc.*) and its desire to protect agricultural and ecologically sensitive land.

In addition, the UGB will help preserve key land forms which separate Benicia physically and visually from adjacent communities; protect and maintain the rural quality of Lake Herman Road and areas adjacent to it; concentrate future development in areas where services and infrastructure can be provided more cost effectively; strengthen First Street as the City's central commercial zone; guard against community health risks by avoiding encroachment into lands affected by the IT Panoche Hazardous Waste Disposal Facility; and prevent encroachment into and avoid land use conflicts with areas designated as a mineral resource area of regional significance (Syr Quarry).



GOAL 2.1: Preserve Benicia as a small-sized city.

"Small-sized city" refers to Benicia's open and uncluttered space, safe neighborhoods and streets, pedestrian-friendly streets, the "Main Street" character of First Street, open vistas of hills and water, historic sites and buildings, strong sense of community and civic pride, good schools, well developed community facilities including parks and a library, low-crime, small town atmosphere, and numerous community-wide celebrations, cultural events, and family-oriented activities.

POLICY 2.1.1: Ensure that new development is compatible with adjacent existing development and does not detract from Benicia's small town qualities and historic heritage, (and to the extent possible, contributes to the applicable quality of life factors noted above).

"Compatible" means "capable of existing together without detrimental effects." This policy applies broadly and citywide to residential and nonresidential uses. Its purpose is to ensure harmonious development in terms of intensity, and architectural character. It is not intended to restrict new buildings or additions to exact duplications of styles or heights; nor is it intended to limit new uses or densities to those found in adjacent existing development. This policy also is not intended to restrict the conversion of single-family dwellings to apartments if the parcel is zoned for multifamily use and if there are other multifamily uses nearby.



Program 2.1.A: Adopt development guidelines that retain the scale and character of the city, preserve public view corridors, and reflect the subdivision and development patterns within existing neighborhoods.

POLICY 2.1.2: Make efficient use of land in new development areas consistent with the surrounding neighborhood.

POLICY 2.1.3: Maintain a visual and physical separation from the cities of Fairfield and Vallejo.

POLICY 2.1.4: Strive to preserve significant areas of vegetation and open space when approving development projects.

"Significant" can mean, for example, a single specimen tree, vegetation serving as habitat, or a grove of several native trees which enhance the canopy and scenic beauty of a neighborhood



GOAL 2.2: **Maintain lands near Lake Herman and north of Lake Herman Road in permanent agriculture/open space use.**

POLICY 2.2.1: Protect and maintain agricultural and rural land uses, hillsides, two-lane curving roads, watershed, riparian corridors and upland grasslands

POLICY 2.2.2: Avoid health risks associated with the inactive IT Panoche Hazardous Waste Facility and land use conflicts with the Syar Quarry

PROGRAMS 2.2.A: Initiate a variety of planning, regulatory, and financial measures to ensure permanent protection of agricultural and open space uses near Lake Herman and north of Lake Herman Road.

PROGRAMS 2.2.B: Acquire property, development rights, or easements to preserve open space

PROGRAMS 2.2.C: Evaluate incorporating the Northern Area into the Tri-City and County Open Space Area.



GOAL 2.3: **Ensure orderly and sensitive site planning and design for large undeveloped areas of the City, consistent with the land use designations and other policies in this General Plan.**

POLICY 2.3.1: Require a Master Plan for new industrial and business park developments on properties under common or single ownership which aggregate to more than 40 acres.

Master plans will encourage the best and most effective use of the properties and will give the City an idea of how and when the various parcels or parts of parcels will be developed and when public facilities will be needed. The industrial properties to which this policy is most likely to apply are listed below and are shown on Figure 2-2. The five industrial properties as of 1995 are: The Seeno properties; the Exxon undeveloped area; Pine Lake north of I-780; the Port south of the bridge; and the Port north of the bridge.

The master plan requirement also applies to other large properties, which are not listed or mapped below but which may in the future be purchased or assembled for development or private redevelopment. Such master planning may be initiated by the Planning Commission, the City Council, or private property owners.

Program 2.3.A: Ensure adequate funding is available for the long-term maintenance of undeveloped areas preserved when approving land divisions.

POLICY 2.3.2: Support land divisions where existing buildings with historic or architectural significance are retained and/or improved rather than demolished.



GOAL 2.4: Ensure that development pays its own way.

State law allows cities to assess fees to ensure that development pays for itself; however the law also requires a nexus between fees imposed on developers and the public improvements funded by those fees.

POLICY 2.4.1: Ensure any new development to be fiscally and financially sound and pay its own way with respect to City and School District capital improvements.

The objective is that neither the City nor the School District will be expected or required to use general funds to provide capital improvements for private development unless a project produces substantial public benefits and amenities in which the City or School District may want to participate.

Program 2.4.A: Monitor development to ensure it does not overburden the City's infrastructure.

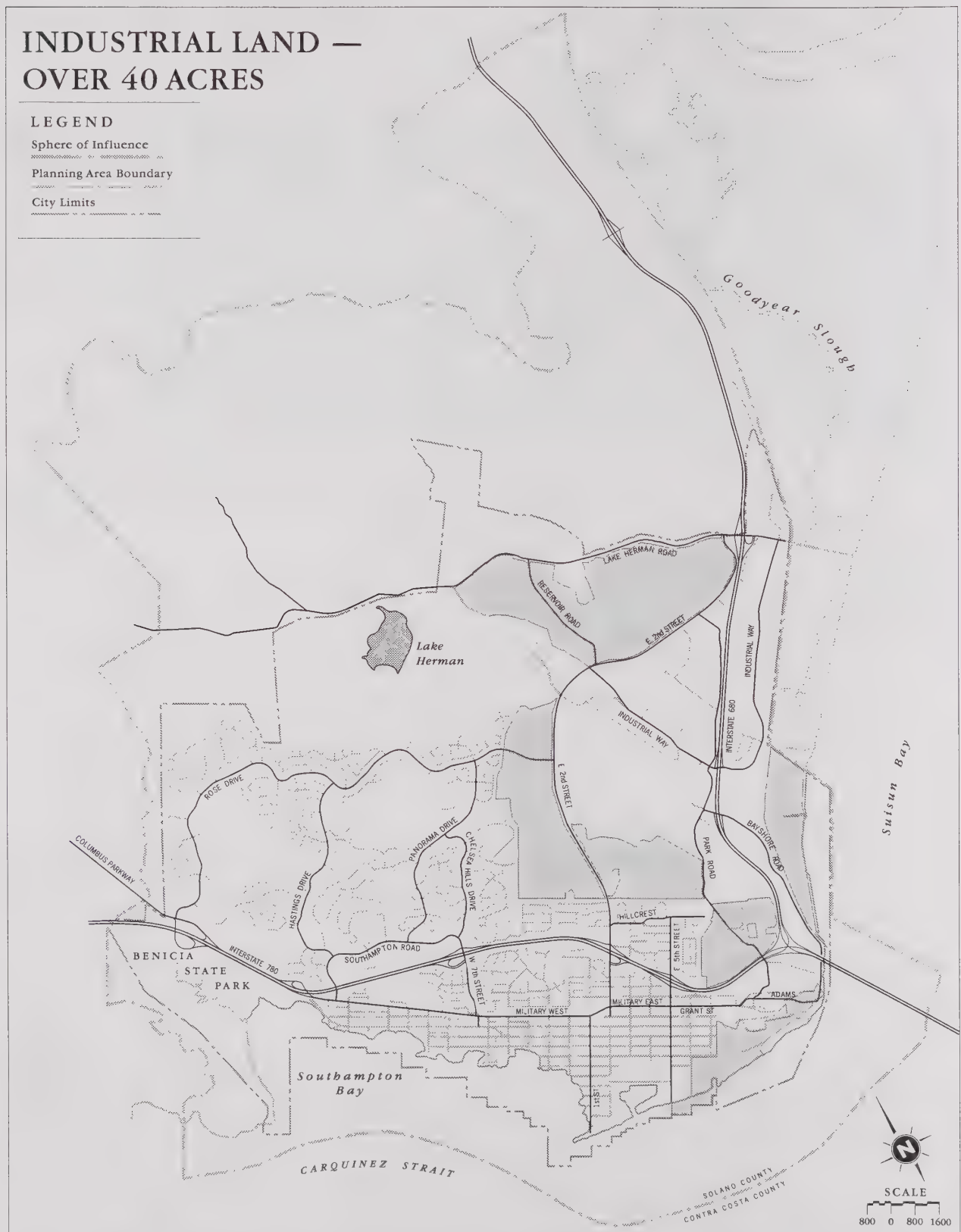


Figure 2-2. Industrial Properties to which Policy 2.3.1 (Master Plan) Applies, as of 1999



B. ECONOMIC DEVELOPMENT

This section of the plan contains five subsections that direct the more urban aspects of how the community should develop. Each subsection focuses on a particular type or area of economic development within the community: industrial development, port development, the Historic Arsenal area, the Downtown area, and other commercial development.

The Economic Development section begins with a discussion of the City's economic strengths and challenges, followed by goals, policies and programs for each of the five types or areas of economic development. Background information about each economic development area or type precedes the goals, policies and programs for that subsection.

1. ECONOMIC OPPORTUNITIES AND CHALLENGES

Benicia is a unique community that offers a "small town" residential and commercial environment in the foreground of a large industrial concentration. While Benicia is part of the Solano County market, its location along the Carquinez Strait, views of the water, and its active Port give the City more economic development opportunities than some of its landlocked competitors. The City also has a strong historic and cultural base, and the historic buildings in the Downtown and Arsenal area add to Benicia's charm and distinction.

The City of Benicia enjoys many economic advantages over similarly-sized cities in the greater Bay Area. It has a significant concentration of economic activity in the Port and the Benicia Industrial Park (BIP), which includes the Exxon Refinery. These are considered “heavy industrial” uses and provide a strong economic base for the City. In addition, businesses that support the refinery industry need to be located nearby, and many choose Benicia given its location and large concentration of like businesses.

The tax revenues that the BIP and other heavy industrial uses generate allow the City to provide a relatively high level of public services, including its own library system. As a result, the Economic Development Goals, Policies, and Programs emphasize the importance of protecting existing heavy industrial uses.

Many also believe, however, that Benicia can capitalize on its central location by diversifying its economy and attracting more high-technology firms and tourists. Although a radical shift in the types of businesses that locate in the city over the next 20 years is not expected, more non-industrial activities are desired in the future. Measures to increase the diversity of industries and land uses therefore can also be found in the Economic Development Goals, Policies, and Programs.

BENICIA’S COMPETITIVE STRENGTHS

From an economic standpoint, Benicia has many competitive strengths. The fact that the City’s industrial vacancy rate is about 6 percent validates this position; other surrounding communities have industrial vacancies from 10 to 17 percent. The City has a well-developed industrial park (BIP), which is geographically compact and topographically separated from the rest of the City. The Port, leased, owned, and operated by Benicia Industries, is over 200 acres and complements many of the activities found in the BIP. The Exxon refinery has drawn over the years a series of support and related industries to the City which together represent an important agglomeration of economic activity. One advantage of the BIP’s size and location is that businesses perceive that their industrial activities will be buffered from potential conflicts with other uses. Exxon owns about 400 acres of land west and south of their facility.

In summary, Benicia’s assets that attract businesses include:

- Central location (*i.e.*, highway accessibility to markets in the Bay Area, Sacramento, and Northern California).
- Presence of major manufacturing and refineries that attract similar types of businesses.
- Historic buildings and places.
- View of the water and hills.
- Some developable commercial vacant parcels (although high-priced).
- Private redevelopment potential and mixed use projects.
- Good transportation and access.

- Supportive local government/business climate.
- Municipal fiscal soundness.
- Highly skilled, reliable, dependable, and productive labor force.
- Quality of life (e.g., low crime, good public schools, warm climate, *etc.*)

BENICIA'S COMPETITIVE CHALLENGES

The City also faces a number of weaknesses in attracting businesses. These include the following, many of which are mentioned in the City's 1995 Economic Development Strategy (Resolution 95-10):

- No public transportation in the BIP industrial area.
- Limited vacant industrial and commercial sites.
- Limited very high and low income housing.
- High rent for Downtown real estate.
- Reliance on one type of industry for major business tax revenues.

Although development fees in Benicia may be higher than in other regions in California and nearby states, they are comparable to the average fees in Solano County and other competitive markets. Industrial and residential fees are only slightly higher than the average, and retail fees are slightly lower than the average.

While it is important to keep development costs low, it is equally important to provide adequate infrastructure and maintain it. A significant number of industrially-zoned parcels require investment in infrastructure in the next 20 years if these sites are to be competitive. This infrastructure could be provided by the City or by developers. Either way, Benicia will need to facilitate the creative financing mechanisms to provide infrastructure in a timely fashion. There is also a need to invest in existing infrastructure that cannot be funded through development impact fees or special assessments under existing law (Government Code §66000 *et seq.*, popularly known as AB 1600). A funding program (e.g., for a landscape and lighting district) should be developed to ensure annual maintenance and replacement of infrastructure to keep the city's non-residential areas competitive.

Although the lack of higher value or executive housing may be a perceived weakness to some in the community, the lack of housing available to those who work in Benicia will have a much greater impact on economic development in the long run. The greater the amount of housing for workers in the BIP, the more competitive the City will be.

BENICIA'S FISCAL STATUS

All communities have their weaknesses and strengths. While Benicia has several perceived economic weaknesses, it also has many economic strengths. Overall, the City's economy, while focused on a few industries, is strong and competitive.

The City worked hard to reduce or hold constant expenditures over the five years 1990-1995 in order to respond to the loss of revenues from property tax diversions to the State and from a reduction in other revenues. Once the outstanding debt from the community park development is repaid and the General Plan update is complete, the Finance Department projects positive fiscal balances starting in 1997-98. Future increases in property taxes may be limited unless additional capacity for development is created. The City will need to work hard to retain existing businesses, to attract new sales-tax generating uses, and to continue its cost containment measures.

A review of per capita expenditures for cities of similar size shows that Benicia residents enjoy a high level of municipal services, which is a direct result of the amount of revenues generated by industry. To continue to enjoy these services, the City will need to protect and enhance business and economic activity in both the BIP and Port areas. It will also need to encourage economic expansion in the Downtown and Arsenal areas. Figure 2-3 shows the projected General Fund Revenues for 1999-2000.

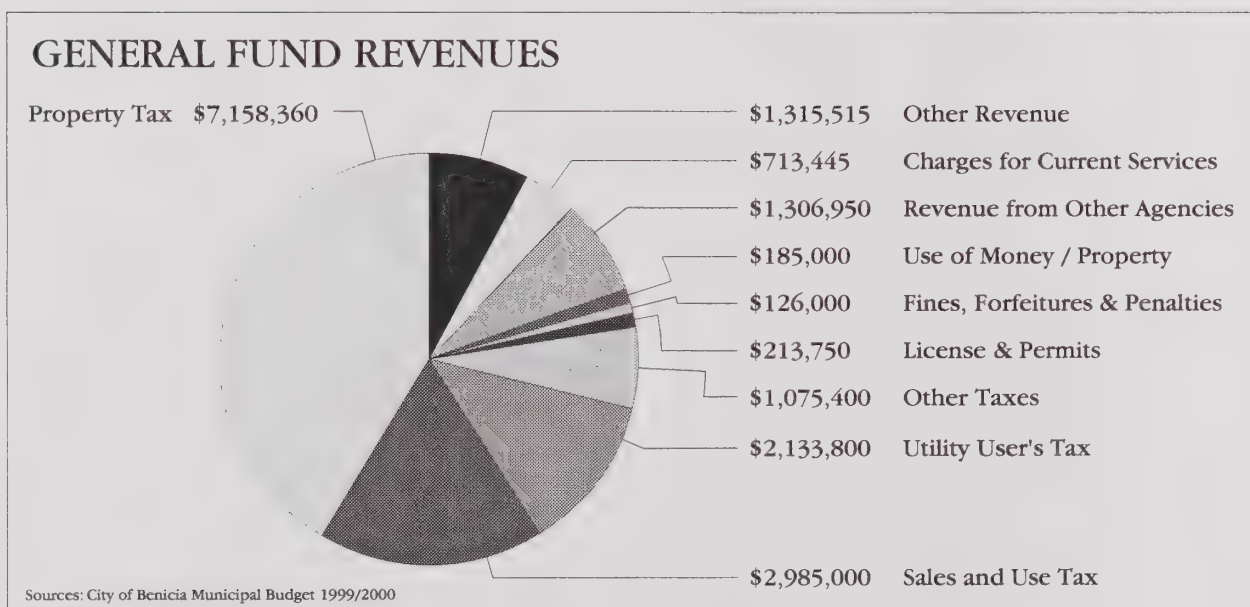


Figure 2-3. City of Benicia General Fund Revenues

2. ECONOMIC DEVELOPMENT GOALS, POLICIES, AND PROGRAMS

Benicia has an aggressive economic development program and has attracted several large companies to the Benicia Industrial Park (BIP) and elsewhere in the City. An Economic Development Strategy was adopted by the City in 1995. The Strategy focuses on (1) business retention and expansion, and (2) business attraction and incentives, and (3) outlines a set of policies and recommended actions. Studies have shown that businesses wishing to expand chose to stay in Benicia rather than move out of state.⁴ Reviews of recent expansion or new leases within the BIP confirm that these economic development efforts are working.

The City's Economic Development Department also recently created an Industrial Development Authority to issue tax-exempt revenue bonds.⁵ Bonds have been issued to assist major employers and space users and keep them in the City. The City also created a local hiring service to help connect local business with local labor.

The goals, policies, and programs in this section address several points: They support continued internal growth and development of the industrial park and its port; they promote diversification of Benicia's economy; and they seek to expand appropriate commercial activity in the Arsenal and Downtown.

CITYWIDE ECONOMIC DEVELOPMENT



GOAL 2.5: **Facilitate and encourage new uses and development which provide substantial and sustainable fiscal and economic benefits to the City and the community while maintaining health, safety, and quality of life.**

Sustainable development maintains or enhances economic opportunity and community well-being while protecting and restoring the natural environment upon which people and economies depend. Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.

This goal is the heart of the entire General Plan. It is a citywide expression of urban development policy. Nearly every policy and program in the General Plan, in some manner, serves to implement this goal.

⁴ "1st Quarter 1995 Industrial Market Overview, Greater East Bay Market," Grubb & Ellis Research Services Group (June 1995).

⁵ These are private activity bonds that are sold to fund a specific project that has a dedicated private revenue source with which to repay the bonds and interest. The interest on the bonds is not taxable, and thus encourages the private market to purchase public bond issues. This is a typical public funding mechanism.

POLICY 2.5.1:	Diversify the mix of economic development programs in the city to include new programs that address Downtown revitalization, tourism, waterfront development, and clusters of related businesses.
<i>Program 2.5.A:</i>	Consider developing a labor force database as part of the Business Attraction, Expansion, and Retention Program which includes information on labor force costs by occupation and industry sector, turnover rates, productivity, reliability, and other factors. Maintain and update the database annually.
<i>Program 2.5.B:</i>	Target business attraction efforts toward firms that pay high wages and with jobs that relate to the skills and education levels of Benicia residents.
<i>Program 2.5.C:</i>	Evaluate future uses on a cost/revenue basis, taking into account economic diversity for the long term and environmental and community costs and benefits.
<i>Program 2.5.D:</i>	Continue to offer incentives for locating in Benicia to businesses that maximize jobs or long-term net revenues to the City of Benicia, or both.
<i>Program 2.5.E:</i>	Develop business incentives that can be used to attract new businesses (e.g., fee deferral program, use of public financing when appropriate) and performance criteria to ensure that benefits are generated in line with incentives provided.
<i>Program 2.5.F:</i>	Continue to maintain and update an economic development strategy which focuses on both the acquisition of new businesses and retention of existing businesses.
<i>Program 2.5.G:</i>	Continue to implement the programs and actions proposed in the City's latest Economic Development Strategy.
<i>Program 2.5.H:</i>	Develop an "economic development web page" for Benicia with pertinent economic and demographic information, and profiles of key development sites and vacant buildings available for new businesses.
<i>Program 2.5.I:</i>	Conduct a bi-annual review of fee burdens for key land uses in Benicia and competing jurisdictions in the region to ensure that Benicia's fees are sufficient and competitive and do not create a deterrent to beneficial development.
<i>Program 2.5.J:</i>	Expand the City's economic development strategy to address the potential for eco-tourism (e.g., related to marshlands), recreation, artists, cultural, and historic elements. Conduct a study of the relative merits and strengths of each of these assets in Benicia.

INDUSTRIAL DEVELOPMENT

As of 1995 there were 1,213 developed acres of industrial land in the city, occupying 42 percent of all developed land. A large part of the existing industrial acreage is located within the Benicia Industrial Park and is categorized as General Industrial use. This is where the heavy industrial uses are located, as well as industrial uses that have a large space demand.

There are approximately 600 companies within the BIP, with combined employment in excess of 6,500 workers. The top 10 employers in the BIP provided a total of 2,250 jobs in 1997, or about 22 percent of the total estimated employment in Benicia. The largest employer in the Industrial Park, with 400 employees, is Exxon Company USA, a petroleum refinery. Other large employers include: Corey Delta Construction, Underground Construction, West Coast Beauty Supply, Alamillo Steel, Rockridge Technology, and the Coca-Cola Bottling Company.

The second largest category of existing industrial land is 270 acres zoned for water-related industrial use. This category applies to the Benicia Port area, most of which is owned by Benicia Industries.

The remaining existing industrial land (29 acres) is developed for Limited Industrial uses. These include industrial office centers and research and development ("R&D") facilities.



GOAL 2.6: **Attract and retain a balance of different kinds of industrial uses to Benicia.**

POLICY 2.6.1: Preserve industrial land for industrial purposes and certain compatible "service commercial" and ancillary on-site retail uses.

"Compatible," as defined in the *California General Plan Glossary*, means "capable of existing together without conflict or detrimental effects." Compatibility will often be decided on a case-by-case basis by the Planning Commission and City Council.

"Service commercial" uses are those that accommodate citywide and regional services that usually are inappropriate in neighborhood or pedestrian-oriented shopping areas. Such services generally require automotive access for customer convenience, servicing of vehicles or equipment, loading or unloading, or parking of commercial vehicles.

POLICY 2.6.2: Other land uses should not adversely affect existing industrial and commercial land uses.

Program 2.6.A: Where General Plan amendments propose to convert industrial land to non-industrial or non-commercial uses, require the preparation of a fiscal and economic impact analysis to ensure that the conversion does not adversely affect the city's long-term economic development, or the economic vitality of existing industrial/commercial uses.

- Program 2.6.B:* Develop criteria for evaluating whether a proposed non-industrial/non-commercial use would impact the viability of existing industrial/commercial uses. Use the criteria to evaluate non-industrial and non-commercial projects proposed in the Industrial Park.
- POLICY 2.6.3:** Facilitate continued development of the Industrial Park. Especially encourage general industrial uses to locate in the basin northeast of Downtown (around Industrial Way between East Second and the freeway).
- Program 2.6.C:* For lands designated limited industrial, reduce the length of time and number of steps required for development proposals to proceed, consistent with CEQA, community development policies and ordinances, and the design review process for general industrial lands.
- POLICY 2.6.4:** Link any expansion of Industrial land use to the provision of infrastructure and public services that are to be developed and in place prior to the expansion.
- Program 2.6.D:* Continue to update the overall capital improvements program and infrastructure financing plan for the Industrial Park and other major industrial areas.
- Program 2.6.E:* Develop Industrial Park infrastructure and public services standards, as approved by the City Council. (See also Program 2.28.A.)
- POLICY 2.6.5:** Establish and maintain a land buffer between industrial/commercial uses and existing and future residential uses for reasons of health, safety, and quality of life.
- Program 2.6.F:* Use topography, landscaping, and distance as a buffer between Industrial Park uses and residential uses.

A buffer is “adequate” to the extent that it physically and psychologically separates uses or properties so as to shield, reduce, or block one set of properties from noise, light, or other nuisances generated on or by the other set of properties. Buffers will be determined on a case by case basis.



- GOAL 2.7:** **Attract and retain industrial facilities that provide fiscal and economic benefits to—and meet the present and future needs of—Benicia.**
- POLICY 2.7.1:** Attempt to attract high-wage and high-revenue producing companies to Benicia.

This policy applies to emerging occupations such as secondary materials industry, wine industry, alternative transportation, environmental technology, fitness, and tourism. The intent of this policy is to encourage Benicia's participation in studies by the Solano Economic Development Corporation (SEDCORP) related to attracting high-tech jobs and marketing efforts targeted to Benicia.

Program 2.7.A: Conduct a study of the City's competitiveness for high-wage businesses. Based on the results, determine which types of high-wage businesses could realistically be attracted to Benicia and develop an appropriate business attraction strategy.

PORT DEVELOPMENT

As discussed in this section the Port of Benicia has two aspects – the Port as a privately operated business and the Port as an important geographic locale in Benicia. The goals, policies, programs are intended to address both aspects of the port.

The Port of Benicia is partially owned by the City and partially owned by Benicia Industries, Inc., a private company. The City leases portions of the Port to Benicia Industries, who in turn leases facilities within the Port to industrial tenants on portions of the approximately 644 acres it controls in Benicia. In 1999, Benicia Industries specializes in the shipment of automobiles and petroleum products.



GOAL 2.8: Maintain the viability of the Port now and in the future to benefit the City of Benicia.

POLICY 2.8.1: Avoid encroachment by future incompatible uses, and where possible, reduce encroachment from existing incompatible uses, in concert with Policy 2.11.1.

Program 2.8.A: Ensure that definitions of “water-related industrial” and “water-front” land uses are consistent with “water dependent” uses as defined in the Seaport Plan.

Refer to Appendix D for discussion of Seaport Plan and related tidelands issues.



GOAL 2.9: Ensure adequate land for port activity.

Program 2.9.A: Work with the Port to evaluate the future level of port activity and need for land in order to sustain an economically viable Port operation.

POLICY 2.9.1: Encourage and create opportunities and methods for cooperative planning of the Port, Arsenal, and Pine Lake.

Rather than just reacting to specific development proposals, the planning should be “pro-active” and “master-planning” in nature. The primary criteria are that the process is conducted in public and that all stakeholders are represented. At a minimum,

“stakeholders” should include City officials, representatives of Benicia Industries, and the general public. Depending on the particular planning project, stakeholders might also include representatives of Caltrans, the Art Community, and the Chamber of Commerce.

“Master Planning” for these areas would evaluate, among other things, the historic preservation of buildings, public access, circulation, affordable housing, live-work space, infrastructure needs (train station, new bridge ramps and interchanges, and ferry service), potential for economic development and revenue enhancement for the City, reconsideration of uses in the lower Arsenal, restrictions on hazardous materials and waste, and improving the public process for project approval.



GOAL 2.10: Provide for carefully-defined visual and physical public access where security and safety considerations permit.

This goal is not intended to conflict with other goals and policies encouraging port viability and industrial growth.

Program 2.10.A: Explore the feasibility of public access to and providing recreation use in the Port in a manner which does not compromise the economic viability or safe operation of the Port.

For a discussion of public trust lands in relation to the Port, refer to Appendix E.

HISTORIC ARSENAL

The Arsenal area is characterized by older, historic buildings, and a multiplicity of uses and tenants, including studios, small professional offices, and small industrial activities, such as cabinet making. The Arsenal fronts on the Port of Benicia and is a distinct area within the Benicia Industrial Park.

Many buildings in the Arsenal area are not used—or are underutilized—and could be converted to various uses. A number of the buildings, however, do not meet the current Uniform Building and Fire Codes and would be costly to convert or upgrade. The area also needs infrastructure improvements (including roads and signs) to create a distinct sense of place.

The artist community in the lower Arsenal is a small yet strong economic force in the City that should be supported and expanded while considering its context in, and the



operating needs of, the Port. This part of the City is a mixed-use area. The Arsenal adds character and diversity to the City and allows for alternative living and working arrangements quite different from those available in other parts of the community.



GOAL 2.11: **Encourage the retention and continued evolution of the lower Arsenal into a historic/cultural/commercial/industrial center of mutually compatible uses.**

The “lower Arsenal” is south of I-780, between the freeway and the water-related industrial lands.

POLICY 2.11.1: Retain and expand the mix of compatible and balanced uses in the lower Arsenal area.

POLICY 2.11.2: Continue to allow live/work uses in the lower Arsenal where it can be demonstrated that adequate buffers exist, including noise buffers, and that the presence of residents would not significantly constrain industrial operations, including the flow of goods and materials.

POLICY 2.11.3: Support the development of the Pine Lake area as an attractive, aesthetic gateway with a water feature.

The Pine Lake area is located immediately north of I-780 and west of Park Road.

Program 2.11.A: Require protection of dramatic views of the strait and the incorporation of a gateway/water feature into any development plans for the Pine Lake area.

A Development Agreement has been adopted for the Pine Lake area. Refer to Appendix F.

DOWNTOWN

The major commercial concentration in the City is Downtown. Nineteen acres of developed commercial uses around the First Street Corridor stretching to the waterfront are designated Downtown Commercial. This designation was created specifically for the First Street Corridor area and is meant to emphasize the importance of First Street as the Downtown. The area has a mixture of office, retail, and residential development.

While the Downtown shares many of the problems faced by older downtowns throughout the country (e.g., vacant lots, underutilized land, and competition from suburban shopping centers), its natural features and historical significance greatly increase its potential for economic development. Major points of interest include the third State Capital of California, the western terminus of the Transcontinental Railroad (the train depot is being renovated), and an accessible waterfront with striking views



of the Carquinez Strait and surrounding hills. The area is a community gathering place that attracts tourists and local residents to its historic sites, shops, restaurants, farmers' market, and special events. Adjoining the Downtown are a marina and several medium density condominium developments.

The General Plan encourages development of the Downtown in a manner that preserves its small-town characteristics. The Downtown provides a human scale and mix of building types; open, scenic vistas; a relaxed and pleasant "sidewalk" atmosphere; and minimum vehicular traffic. It offers social and recreational opportunities and points of interest to residents and visitors. The historic character of Downtown is enhanced by adjacent alleys, residential streets that lead to the waterfront, specialty and antique stores, a waterfront promenade, and a fishing pier at the end of First Street.

The intent of the following goals and policies is to allow a mix of uses in the Downtown, including residential;

provide easy circulation by transit and on foot; develop smooth, functional connections to other parts of the community; provide nighttime activities to create safer streets; make a commitment to public life Downtown by providing public gathering spaces; recognize the historical importance of the area; improve surrounding neighborhoods; cultivate a unique identity that will attract visitors; invest public funds in street improvements, housing, public transit, and cultural activities; actively recruit private investment and incentives to encourage development on First Street; and encourage cooperation in the management of the Downtown area.



GOAL 2.12: **Strengthen the Downtown as the City's central commercial zone.**

POLICY 2.12.1: Emphasize retail sales and service businesses along First Street, preferring retail commercial on the street level and encouraging other commercial, office, and housing as important supporting uses on upper floors.

Program 2.12.A: Consider improvements to Solano Square to make it more pedestrian friendly.

Program 2.12.B: Work to attract economically viable businesses that will create night-life Downtown such as restaurants, cafes, movie theaters, and other entertainment uses.

Program 2.12.C: Continue business recruitment and marketing efforts for Downtown. Provide promotional information on Benicia's

economic and demographic profile, available sites and building space, a directory of support services, and an expedited approvals program.

Many of these programs are already carried out by the City based on the City's adopted Economic Development Strategy (Resolution 95-10). Also, the City funds Benicia's Main Street Program which provides some of the services listed above.

Program 2.12.D: Develop public/private partnerships to implement financing mechanisms such as a Business Improvement District to fund capital improvements and repairs to Downtown.

Program 2.12.E: Retain a permanent Main Street Program.

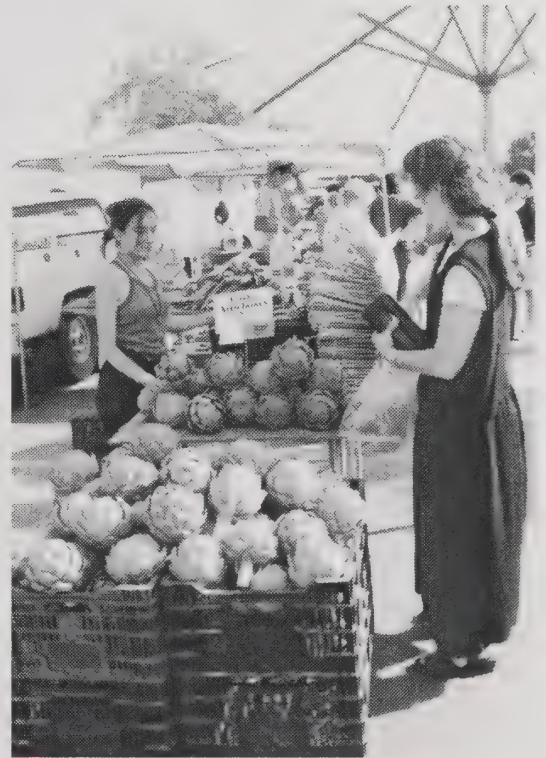
Program 2.12.F: Promote additional civic and compatible public and private uses in the Civic Center area.

POLICY 2.12.2: Permit a mix of residential and commercial uses including detached single-family homes and live/work quarters in the first row of blocks east and west of First Street. Allow small retail commercial businesses on parcels closest to First Street, and small, less intense uses (such as offices, personal services, and bed-and-breakfast establishments) anywhere within the block.

The intent of this policy is to encourage retention of the existing small-scale, fine-grain development based on historic lot sizes Downtown.

Program 2.12.G: Review and modify the zoning ordinance, as needed, to accommodate a mix of uses in the blocks immediately east and west of First Street.

POLICY 2.12.3: Seek to make Downtown a thriving and vigorous community center offering a variety of activities and attractions for residents and visitors.



- Program 2.12.H:* Continue to promote special events in the Downtown such as a farmers' market, street fairs, art and music festivals. Encourage events that remain open in the early evening. (See policies in Noise section.)
- Program 2.12.I:* Work with existing restaurants and cafes to provide sidewalk food service where the service will not impede pedestrian flow and where adequate sidewalk space exists.
- Program 2.12.J:* Maintain public parks, streets, and sidewalks located Downtown in a clean and safe condition.
- Program 2.12.K:* As the budget allows, provide amenities such as additional benches along First Street and in adjacent public areas; drinking fountains, public art, shade trees and arbors.
- POLICY 2.12.4:** Create a social, recreational, and economic anchor at the waterfront end of First Street.
- Program 2.12.L:* Use the Urban Waterfront Restoration Plan to guide the planning and development of public waterfront improvements; when siting private development; and when designing public access between commercial uses and the waterfront.
- Program 2.12.M:* Investigate the feasibility of a multi-use Community Center.
- Program 2.12.N:* By the end of the year 2000, decide on the feasibility of restoring three City-owned structures: —the former Southern Pacific Railway Depot and Jurgensen's Saloon, and the Von Pfister Adobe.
- Program 2.12.O:* Establish a permanent public green on the waterfront south of B Street at Second Street.
- This public green is included in the City's 1990 Waterfront plan as a "marina green."
- Program 2.12.P:* Investigate the possibility of developing a west side marina.
- Program 2.12.Q:* Develop a "tourist-oriented web page" that includes photos and information about Benicia as a tourist destination, such as information on lodging, historic places, restaurants, artists galleries and studios, and recreational and natural resources.
- Program 2.12.R:* Continue to support promotional maps for visitors that identify locations of restaurants, services, specialty retail, recreational, and other facilities that cater to visitors and tourists.

OTHER COMMERCIAL DEVELOPMENT

Within the City in 1995, about 86 acres were developed for commercial use. Over half of that acreage is designated for "general commercial"—a broad designation that

includes stores or services that are meant to serve the entire community plus the public traveling through the area. Areas designated for general commercial include a section in the lower Arsenal, an area around East Fifth Street and Military East, Solano Square, and Southampton Road. The other major commercially developed area is the 19 acre Downtown, which was discussed in the previous section.

Only three acres are developed for “neighborhood commercial” uses in the entire city. The remaining developed commercial acreage is used for office (nine acres) and waterfront commercial (four acres). In general, the city’s existing commercial uses are limited in size, acreage, intensity, and sales volume.



GOAL 2.13: **Support the economic viability of existing commercial centers.**

POLICY 2.13.1: Direct new commercial ventures first, towards Downtown, and second, to other existing economic centers (instead of dispersing resources to new areas).

Program 2.13.A: As part of the Business Attraction, Expansion, and Retention Program, maintain an available commercial space and site database with information on size, lease rates, tenant improvements, etc., and make it readily available to prospective businesses.

POLICY 2.13.2: Preclude extension of the existing commercial development east along Military East and south along East Fifth Street.

C. CIRCULATION

Government Code §65302(b) states that the general plan shall include a circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities, all correlated with the land use element of the plan. The requirement for correlation is particularly important, since it recognizes the close connections between the different elements of the general plan.

The circulation element describes facilities for the movement of people and goods throughout the City. It includes a plan of the streets, highways, rail, and water transportation facilities designed to serve the community. It also discusses county and regional transportation planning programs and the future of transportation in Benicia. The last section presents the circulation goals, policies, and programs.

1. COUNTY AND REGIONAL TRANSPORTATION FRAMEWORK

The City's authority over the provision of transportation services in Benicia is determined by regulations at the local, State and federal level. The City's transportation decisions are coordinated on a countywide level through Solano County's Congestion Management Program (CMP) and the Solano Transportation Authority (STA). Regional transportation decisions for the nine county Bay Area are made by the Metropolitan Transportation Commission (MTC), which derives its powers from State and federal transportation funding programs.

CONGESTION MANAGEMENT AGENCY

The STA is the designated congestion management agency (CMA) for Solano County and the cities. State law requires the Authority to adopt and implement a *Congestion Management Program (CMP)*, which contains the procedures for managing congestion created by growth and identifies all transportation projects proposed for State and federal funding, for seven-year planning periods.

METROPOLITAN TRANSPORTATION COMMISSION

MTC is the agency designated with the decision-making authority for the Bay Area for regional transportation issues. MTC prepares a Regional Transportation Plan which describes transportation investments in the Bay Area for the next 20 years. These transportation investments are directed at the "Metropolitan Transportation System" (MTS) which includes the regionally significant components of the Bay Area's transportation network. Components of the MTS located in Benicia include the freeways, East 2nd Street, Lake Herman Road, Military between I-780 and East 2nd St., the Port of Benicia, Benicia Transit Services, and the Union Pacific rail line. State and federal statutes require that MTC find a project or program consistent with the Regional Transportation Plan before allocating certain State funds and any federal funds for that project or program.

2. THE MOVEMENT OF PEOPLE

PEDESTRIAN AND BICYCLE MOVEMENT

Certain areas of Benicia are very walkable. The Downtown, lower Arsenal, and waterfront areas provide closely spaced land uses and relatively flat topography, as well as a pleasant physical environment. The northern residential and industrial areas are less pedestrian-friendly, with hilly terrain and longer distances between uses.

Bikeways are classified based on the Caltrans classification system for off-road (Class I) and on-road (Class II and Class III) facilities, as described in Table 2-7.

Table 2-7. Classification of Bicycle Facilities

CLASS I	Bicycle Path	Paved path separated from automobile traffic by a curb and landscaped strip, or routed through an open space area. Motorized vehicles are prohibited; may be combined with pedestrian trail.
CLASS II	Bicycle Lane	Paved extension of a roadway designated exclusively for bicyclists.
CLASS III	Bicycle Route	Signed routes where bicycles share roadways with vehicular traffic; no separate right-of-way is provided for bicyclists.

Benicia's Bicycle and Multi-Use Trail System is shown in Figure 2-4. This system, which shows both existing and planned future facilities, was developed for the Benicia Parks, Trails and Open Space Master Plan in 1994. The City's existing bicycle facilities serve primarily the waterfront, western Downtown, and northern residential areas. Extensions and connections are planned along most of the arterial roadways and some collector streets, as well as off-road alignments, to provide a fully connected system.

PUBLIC TRANSIT

Three forms of public transit serve Benicia residents: buses, passenger rail and ferries. The following provides an overview of the services currently available in Benicia.

Bus Transit

Benicia Transit is an intercity fixed-route service which provides service to the ferry terminal, the Lemon/Curtola Park and Ride stop in Vallejo, and the Sun Valley Mall as well as the Pleasant Hill BART station in Contra Costa County.

In addition to its fixed-route transit services, Benicia funds a local Dial-a-Ride program open to the general public. The service is provided under contract with a transportation services company. Benicia also participates in the intercity "Run



Figure 2-4. Bicycle and Multi-Use Circulation Diagram

About” paratransit service running primarily between Vallejo and Benicia. Since 1991, Caltrans has operated a daily Benicia-Martinez Bridge shuttle bus between the Park-and-Ride lot at the I-780/East 2nd St. interchange and the Martinez AMTRAK station. It is anticipated that this service will be discontinued on completion of the second bridge span.

Passenger Rail Service

There is commuter rail service operating through Solano County, and many Benicia residents commute to work via BART trains in Contra Costa County, using Benicia Transit to travel to the Pleasant Hill BART station.

Ferry Transit

Benicia commuters have access to ferry service via Benicia Transit to the Vallejo Ferry Terminal. The ferry operates between the ferry terminals in Vallejo and San Francisco.

AUTOMOBILE MOVEMENT

Street system

The original settlement of Benicia was surveyed by Jasper O’Farrell (who also laid out the street system in San Francisco). A five-mile stretch of shoreline was selected, and a grid system of streets was superimposed with little relation to topography. All north-south streets in the original settlement have 80-foot wide rights-of-way, while the east-west streets have alternating 60- and 80-foot-wide rights-of-way. North-south streets were extended beyond the shoreline and into the water. Street names are alphabetical in the east-west direction and numbered in the north-south direction.

In the mid-1960’s, an east-west freeway (I-780) was constructed generally between “O” and “S” Streets. New development north of the freeway subsequently abandoned the grid system to minimize grading and street slope.

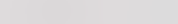
3. CIRCULATION SYSTEM

Figure 2-5 shows the existing and future circulation system for Benicia. It will serve existing traffic as well as new traffic from development allowed under this General Plan. The system includes five basic roadway types: Freeways, Major Arterials, Minor Arterials, Collectors and Local Streets. The system includes several roadway connections and extensions which do not exist as of 1997, including:

1. A second Benicia-Martinez Bridge Span (not shown on Figure 2-5);
2. Public road connections through the lower Arsenal and Port areas, to include Bayshore Road (minor arterial), Adams Street (major arterial), and Oak Street (minor arterial);
3. A Bayshore Road connection between Park Road and Industrial Way (minor arterial);
4. A new east-west connector roadway between East Second Street and Park Road (minor arterial); and

GENERAL PLAN CIRCULATION SYSTEM

Legend:

-  Freeway
-  Major Arterial
-  Minor Arterial
-  Collector
-  Local Street
-  Railroad

Future new/extended arterial alignments (illustrative only):

1. Second Benicia-Martinez Bridge span.
2. Public Bayshore Road connection through port area.
3. Bayshore Road connection between Park Road and Industrial Way
4. East-west connector roadway between East Second Street and Park Road
5. Extension of Industrial Way north to Lake Herman Road.



Figure 2-5. Circulation Diagram

5. Extension of Industrial Way north to Lake Herman Road (minor arterial).

Following is a description of the different roadway types in the Circulation System.

FREEWAYS

Freeways are intended to serve regional and sub-regional travel. In Benicia, the location of freeways relative to the rest of the street network results in some (but not extensive) freeway use by residents or employees for intra-city travel.

Interstate Highways I-680 and I-780 serve north-south and east-west travel respectively, through and within Benicia. Each are four-lane facilities through Benicia.

I-680 (six travel lanes) crosses the Benicia-Martinez bridge to the south. Caltrans plans to add a second bridge span which would result in five travel lanes in each direction (northbound and southbound).

ARTERIAL STREETS

Arterial streets link residential, commercial, and industrial districts with the highway system. They serve primarily through-travel as opposed to providing direct access to adjacent land uses. A Major Arterial is a roadway which connects freeways to minor arterials, other major arterials, and collector streets. A Minor Arterial is a roadway which connects major arterials to collectors and local streets. Arterials generally provide two to four travel lanes. Major and minor arterials in the General Plan Circulation System (see Figure 2-5) include:

Major Arterials	Minor Arterials
East Second Street	Rose Drive
Industrial Way	Park Road (except major arterial section)
Lake Herman Road	Oak Street
Military East - Military West	Bayshore Road
Adams Street	Hillcrest Ave., btwn E. 2nd and E. 5th Sts.
Southampton Road	East Fifth Street
West Seventh Street	New Park - East Second Connector Road
Columbus Parkway	First St. between Military and East "H" St.
State Park Road	Cambridge Drive
Park Road between Industrial Way and Bayshore Road	Panorama Drive from Southampton Road to Rose Drive
	Chelsea Hills Drive
	Hastings Drive
	West Seventh Street from West "K" Street to Military West

COLLECTOR STREETS

Collector streets are generally two lanes wide and connect local streets to minor and major arterials. Collector streets generally do not form a continuous system; otherwise there would be a tendency to use them as arterials. The Benicia General Plan provides for collectors to serve the marina, various industrial areas, and most residential districts. The collectors in the General Plan Circulation System (see Figure 2-5) include:

Channel Road	Larkin Drive between Turner and Panorama
Kearny Street	West "K"/West J" Street (west of First Street)
McAllister Street	West 5th St./Sherman Dr. (north of Military)
Arguello Street	First Street South of East "H" Street
Solano Drive (Hastings to Larkin)	East "H" Street
Turner Drive	East "D" Street between First Street and East Second
Warwick Drive	East "E" Street between East 2nd and East 5th Streets
Seaview Drive	E. Second Street btwn East "H" and East "D" Streets

LOCAL STREETS

The function of local streets is to provide access directly to abutting property. Future local streets are not shown on the Circulation System map because they are typically laid out in accordance with City standards as part of the subdivision design process. They play an important secondary role as locations for utilities, easements, open space for light and air, and firebreaks between buildings. Local streets are not intended to carry through-traffic from one part of the community to another.

4. EXISTING AND FUTURE TRAFFIC CONDITIONS

FREEWAYS

The existing Level of Service (LOS) on freeways is monitored by the Solano Transportation Authority as part of their Congestion Management Program (CMP). LOS is expressed using a letter from A to F, with LOS A being best and LOS F being worst. (See Glossary for a more complete explanation of LOS). The 1995 CMP identifies LOS F conditions at the Benicia-Martinez Bridge toll plaza, LOS C/D conditions on I-680, and LOS C conditions on I-780.

The most recent study of future freeway traffic volumes is the I-680/I-80/I-780 Triangle Area Traffic Study Traffic Operations Report (1997). This report describes 1995 traffic volumes and projects future (2010) volumes for several scenarios which combine different sets of freeway improvements. The "No Build" scenario, which assumes the only improvement would be the scheduled Benicia - Martinez Bridge span which

represents the “worst case” for future conditions. For this case, the study indicates that peak hour freeway operations would be poor in the future (LOS D/E), although volumes would remain within the existing lane-capacity for all segments except I-780 between Southampton Road and Columbus Parkway in the AM peak hour.

Freeways serve both locally- and regionally-generated traffic and have a profound effect on communities. It is City policy to encourage Caltrans to maintain the current number of lanes on I-680 and I-780 through the city, except for spot widenings that may be necessary to smooth traffic at ramps. These policies are consistent with others in this General Plan which call for promoting alternative commute methods and a better jobs/housing balance to minimize freeway travel demand. The intent of the General Plan is not to create greater traffic congestion by rejecting all freeway widening, but to address the realities of growing travel demand through site-specific improvements, land use policies that minimize travel demand, and high occupancy vehicle (HOV) travel.

CITY STREET NETWORK

On the local, non-freeway road network in Benicia, traffic conditions are best represented by the operating level of intersections, because intersections are the primary source of delay and “bottlenecks.” Traffic operations at intersections are described in terms of Level of Service (LOS). LOS D is generally accepted as the standard for intersection operation and has been adopted as the standard for Benicia. (See Policy 2.20.1.)

Tables 2-8 and 2-9 describe the different LOS designations A to F, for signalized and stop-controlled intersections.

There are 24 key intersections in Benicia. Table 2-10 shows existing and projected service levels. As of 1995, four intersections operated at LOS D, and another four operated at LOS E or F. The LOS E/F intersections are all located at I-780 ramps. The rest of the intersections operated at LOS C or better. Of the eight intersections operating at LOS D or worse, five are stop-controlled intersections. A check of the Caltrans signal warrant criterion for peak hour volumes at intersections shows that installation of a signal is warranted at two of these intersections: East Second Street/I-780 Westbound Ramps and East Fifth Street/I-780 Eastbound Ramps. Both of these intersections are scheduled to be signalized in the City's current Capital Improvement Program. Signalization would improve the existing LOS to C or better at these intersections.

Future traffic volumes at the study intersections were projected based on the land use changes in this General Plan. The traffic projection methodology is described in the General Plan DEIR Transportation chapter. Table 2-11 contains the future service levels which would result from these volumes, assuming no intersection improvements were made. While this General Plan involves a reduction in land use intensity in many areas relative to the previous general plan, the projected land uses at buildout would still cause unacceptable conditions (LOS D or worse) at 14 of the 24 intersections. (An additional eight intersections are already at LOS D or worse, as noted above).

Table 2-8. Level of Service Criteria for Signalized Intersections

LEVEL OF SERVICE (LOS)	VOLUME-TO-CAPACITY RATIO
A	0.00 - 0.60
B	0.61 - 0.70
C	0.71 - 0.80
D	0.81 - 0.90
E	0.91 - 1.00
F	>1.00

Source: *Transportation Research Board, Circular 212, Interim Materials on Highway Capacity*

Table 2-9. Level of Service Criteria for Stop-controlled Intersections

LEVEL OF SERVICE (LOS)	AVERAGE STOPPED DELAY PER VEHICLE (IN SECONDS)
A	0 to 5.0 seconds
B	5.1 to 10.0 seconds
C	10.1 to 20.0 seconds
D	20.1 to 30.0 seconds
E	30.1 to 45.0 seconds
F	more than 45 seconds

Source: *Transportation Research Board, Highway Capacity Manual, 1994*

The City's policy is to maintain intersection operation at LOS D or better, except where improvements would be infeasible or undesirable due to considerations of right-of-way, impacts of neighboring properties, aesthetics, or community character. Thus, the improvements included in this General Plan attempt to provide LOS D or better at the 24 intersections, wherever possible.

Figure 2-6 shows the intersection improvements which would be required to improve all intersections to at least LOS D. Table 2-11 shows the projected level of service at the study intersections with the improvements. Of the 22 intersections which require improvement, 14 would require the installation of a signal, and all 22 would require lane additions on some or all approaches. Some of the lane recommendations may not be feasible due to physical constraints; however, more detailed operational studies of these intersections can be performed as the need for the improvements draws near,

Table 2-10. Existing (1995) and Future Intersection Levels of Service (LOS)

INTERSECTION	CONTROL TYPE	EXISTING SERVICE LEVEL			FUTURE SERVICE LEVEL		
		V/C	DELAY (SEC.)	LOS	V/C	DELAY (SEC.)	LOS
1. Columbus Parkway/Rose Drive	Signal	0.82		D	1.75		F
2. Southampton/Hastings	One-way Stop		15/3	C/A		28/4	D/A
3. Southampton/Military West	Signal	0.46		A	0.58		A
4. Southampton/Chelsea Hills	Signal	0.74		C	1.09		F
5. West Seventh/I-780 WB On/Off	Signal	1.01		F	1.72		F
6. West Seventh/I-780 EB On/Off	Signal	0.60		A	1.07		F
7. First / Military	Signal	0.53		A	.76		C
8. East Second/I-780 WB On/Off	One-way Stop		81/22	F/D		*/*	F/F
9. East Second/I-780 EB On/Off	Signal	0.63		B	1.28		F
10. East Second/Military East	Signal	0.63		B	1.57		F
11. East Fifth/I-780 WB On/Off	One-way Stop		259/66	F/F		*/*	F/F
12. East Fifth/I-780 EB On/Off	One-way Stop		35/4	E/A		*/*	F/F
13. East Fifth/Military East	Signal	0.80		D	1.23		F
14. East Second/Rose Drive	Signal	0.58		A	1.91		F
15. East Second/Industrial	Two-way Stop		29/7	D/B		*/*	F/F
16. Bayshore/Park	Four-way Stop		28	D		*	F
17. Bayshore/I-680 SB On	WB Left Yield		5/1	A/A		*/*	F/F
18. Bayshore/I-680 NB Off	One-way Stop		6/3	B/A		*/*	F/F
19. Industrial/Park	Four-way Stop		14	C		*	F
20. Industrial/I-680 SB Off	One-way Stop		5/1	A/A		*/28	F/D
21. Industrial/I-680 NB On	One-way Stop		8/4	B/A		*/*	F/F
22. Lake Herman/East Second	Two-way Stop		9/4	B/A		*/*	F/F
23. Lake Herman/I-680 SB On/Off	One-way Stop		9/1	B/A		*/*	F/F
24. Lake Herman/I-680 NB On/Off	Two-way Stop		/2	A/A		*/*	F/F

For signalized intersections, the volume/capacity ratio is given. For side street stop-controlled intersections, two delays and service levels are given: the delay for the worst movement, and the average intersection delay. For four-way stops, the average intersection delay is given.

* = very long delays (over two minutes)

INTERSECTION MITIGATIONS

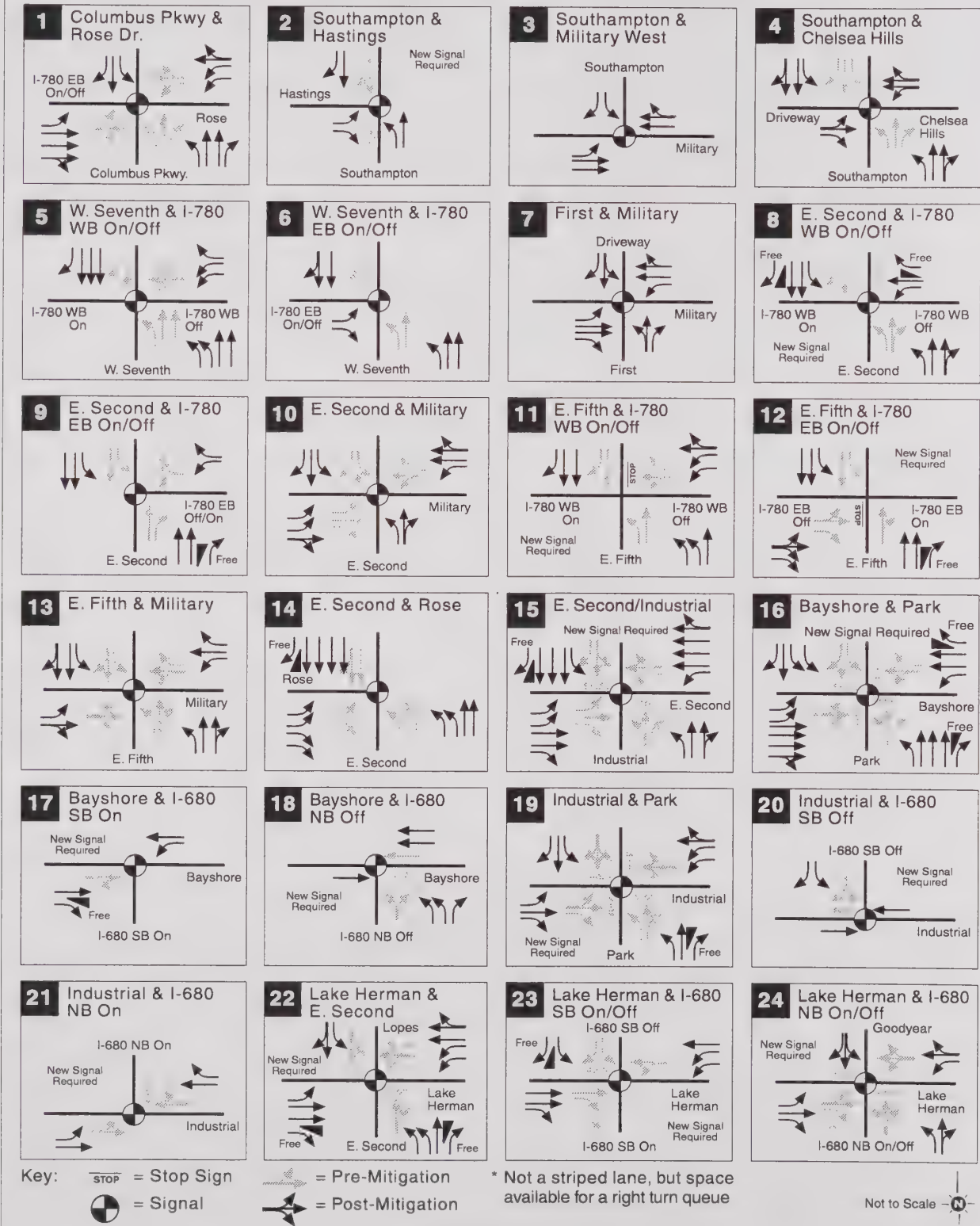


Figure 2-6. Intersection Mitigations

Table 2-11. Intersection LOS: Future Conditions with and without Intersection Improvements

INTERSECTION	EXISTING CONTROL TYPE	WITHOUT IMPROVEMENTS			WITH IMPROVEMENTS		
		V/C	DELAY (SEC.)	LOS	V/C	DELAY (SEC.)	LOS
1. Columbus Parkway/Rose Drive	Signal	1.75		F	0.89		D
2. Southampton/Hastings	One-way Stop		23/4	D/A	0.71		C
3. Southampton/Military West	Signal	0.58		A	0.59		A
4. Southampton/Chelsea Hills	Signal	1.09		F	0.82		D
5. West Seventh/I-780 WB On/Off	Signal	1.72		F	0.84		D
6. West Seventh/I-780 EB On/Off	Signal	1.07		F	0.76		D
7. First/Military	Signal	0.76		C	0.76		C
8. East Second/I-780 WB On/Off	One-way Stop		*/*	F/F			D
9. East Second/I-780 EB On/Off	Signal	1.28		F	0.87		D
10. East Second/Military East	Signal	1.57		F	0.83		D
11. East Fifth/I-780 WB On/Off	One-way Stop		*/*	F/F			D
12. East Fifth/I-780 EB On/Off	One-way Stop		*/*	E/F			D
13. East Fifth/Military East	Signal	1.23		F	0.88		D
14. East Second/Rose Drive	Signal	1.91		F	0.89		D
15. East Second/Industrial	Two-way Stop		*/*	F/F			D
16. Bayshore/Park	Four-way Stop		*	F			D
17. Bayshore/I-680 SB On ramp	WB Left Yield		*/*	F/F			C
18. Bayshore/I-680 NB Off ramp	One-way Stop		*/*	F/F			D
19. Industrial/Park	Four-way Stop		*	F			D
20. Industrial/I-680 SB Off ramp	One-way Stop		*/28	F/D			D
21. Industrial/I-680 NB On ramp	One-way Stop		*/*	F/F			B
22. Lake Herman/East Second	Two-way Stop		*/*	F/F			D
23. Lake Herman/I-680 SB On/Off	One-way Stop		*/*	F/F			C
24. Lake Herman/I-680 NB On/Off	Two-way Stop		*/*	F/F			B

For signalized intersections, the volume/capacity ratio is given. For side street stop-controlled intersections, two delays and service levels are given: the delay for the worst movement, and the average intersection delay. For four-way stops, the average intersection delay is given.

* = very long delays (over two minutes)

and alternative solutions may be identified (e.g., signal cycle length or phasing changes, adding capacity at a different intersection approach, coordinating timing at adjacent signals, *etc.*)

It should be emphasized that this improvement analysis is based on an estimate of conditions with reasonably foreseeable development allowed by this General Plan, to the year 2015—almost 20 years from now. As such, it constitutes long-range planning information, which will need to be supplemented by ongoing traffic counts and studies by the City to ensure that the appropriate improvements are developed and implemented when needed.

Future Arterial Widths

The definitions for arterials and collectors, noted earlier in this section, are summarized below:

- A major arterial is two to four lanes wide and connects freeways to minor arterials, other major arterials, and collectors.
- A minor arterial is two to four lanes wide and connects major arterials to collectors and local streets.
- A collector street is generally two lanes wide and connects local streets to minor and major arterials.

Projected future volumes on Benicia's arterials were analyzed to determine where widening or other changes may be needed. (The DEIR Transportation Chapter includes a table of arterial capacities which was used for this analysis). Table 2-12 shows the arterial segments which may exceed capacity with development allowed in this General Plan. As with the intersection improvements described above, this analysis provides long-range planning information, which will need to be supplemented by ongoing traffic counts and studies by the City.

Although the projected traffic volumes indicate the need for some roads to be widened, road widening may have deleterious effects, and alternatives should be studied before new widening projects are added to the City's Capital improvement Program.

Most of the improvements called for above would provide much greater capacity than needed. In most locations, only an additional 10 to 20 percent in traffic-carrying capacity is needed. A road widening from two to four lanes adds 100 percent capacity.

The City has recognized the need to provide smooth and reasonably convenient traffic flow, through General Plan policies such as maintaining LOS D where feasible. At the same time, the community is wary of the downside of over-sizing roads and intersections—a less pleasant environment for pedestrians and bicyclists, a tendency to draw new traffic to locations where excess capacity is provided, and a disincentive to use alternative travel modes such as carpooling and transit.

The General Plan promotes non-auto travel modes through policies and programs aimed at enhancing the pedestrian, bicycle, and transit experience. These policies

would be undermined if the road network offered excess capacity. As traffic congestion grows on city roads, the City will consider alternatives to widening, such as “spot widening” at congestion points, aggressive Travel Demand Management programs, rerouting traffic, prohibiting certain turning movements during peak hours, and coordinating traffic signals.

Table 2-12. Streets That May Exceed Existing (1997) Capacity with Future Growth Under this General Plan

ROADWAY	SEGMENT	IN CAPITAL IMPROVEMENT PROGRAM?
Lake Herman Road	East of the I-680 NB Ramps	No
East Second Street	Between Lake Herman Road and existing four-lane section	Yes (southeast half only)
East Second Street	Between I-780 WB Ramps and Military East	Yes
East Fifth Street	Between I-780 WB Ramps and Military East	Yes
Industrial Way	Between Lake Herman Road (along new extension) and the I-680 ramps	No
Bayshore Road	Between I-680 SB Ramp and Industrial Way ⁶	No
Military West	Between West Fifth and West Second	Yes
Military East	Between East Second and East Fifth	No
West Seventh	Between Chelsea Hills and Military West ⁷	Yes
Park Road	Between Industrial and Bayshore	Yes

5. PARKING CONDITIONS

Benicia generally has good parking conditions, with adequate on-street and off-street parking provided for local uses.

⁶ A future extension between Park Road and Industrial Way would extend through Exxon and would be difficult to build to four lanes. Also, any widening of the existing Sulphur Springs Creek two-lane bridge would be very costly. It is likely that a four-lane facility could extend only between the I-680 south-bound ramp and Park Road. The remaining portion would remain two lanes.

⁷ Any widening of West 7th at the I-780 interchange would require a new bridge, at significant cost.

6. FREIGHT AND GOODS MOVEMENT

Three types of transportation facilities move freight and goods in Benicia. They are truck, rail, and port facilities.

TRUCK FACILITIES

Trucks are used for freight transport primarily in Benicia's industrial area along the northern I-680 corridor, and in the Port area adjacent to the Bridge. Freeway signs direct Benicia Industrial Park traffic to use I-680 exits.

As development allowed in the General Plan takes place, truck traffic will increase in the industrial and Port areas, and to a lesser extent in other growth areas.

FREIGHT RAIL FACILITIES

Freight rail facilities in Benicia center on the main Union Pacific Railroad line from Sacramento. This line once terminated at the foot of First Street, but now crosses the Carquinez Strait on a bridge paralleling the Benicia-Martinez Bridge to Martinez and the East Bay. Rail spur lines serve Benicia's industrial park area to the north and the Port area along the southern waterfront. Rail service along the waterfront terminates before reaching East 5th Street.

The spur line through the Benicia Industrial Park and the Arsenal area is used most frequently by auto carriers and by Exxon.

Caltrans and Union Pacific have negotiated an agreement for complete rebuilding of both tracks. The agreement will allow increased passenger rail service without interfering with freight trains.

PORT FACILITIES

Benicia has a natural deep water channel adjacent to the shore along the Carquinez Strait. This channel permits container ships, fuel tankers, and freighters with fairly deep draft (up to about 35 feet) to dock at Benicia's Port.

The Port of Benicia, which is leased and owned by Benicia Industries (a private company), has a 2,400-foot deep-water pier which provides berthing for three ships. This lease and the Bay Area Seaport Plan are discussed in Appendix D. There is also an existing petroleum service dock northeast of the Port of Benicia pier.

7. CIRCULATION GOALS, POLICIES, AND PROGRAMS

The goals, policies, and programs that follow deal comprehensively with the needs of and recommendations for pedestrian and bicycle circulation; transit, rail, and ferry service; reducing traffic congestion; parking; needs in special areas of the city (industrial park, Pine Lake, and Lower Arsenal); and proposals for freeway modifications.

**GOAL 2.14:**

Enhance Benicia's small-town atmosphere of pedestrian-friendly streets and neighborhoods.

POLICY 2.14.1:

Give priority to pedestrian safety, access, and transit over automobile speed and volume.

Program 2.14.A:

Reexamine City standards to allow the development of local streets with the minimum pavement width needed in residential areas, at the same time assuring that emergency access is maintained and that pedestrian and vehicular safety are preserved.

Program 2.14.B:

Consider physical and operational changes to reduce speeds (e.g., narrow lane widths and signal timing), and increase traffic speed enforcement.

Program 2.14.C:

Consider residential streets with textured pavements and parallel parking.

Program 2.14.D:

Where feasible redesign corner radii to corners with tight radii to slow vehicles and alert drivers to pedestrians in crosswalks.

Program 2.14.E:

Consider reducing lane widths, as one method of both slowing traffic and making room for parking, wider sidewalks, or bike lanes.

Program 2.14.F:

Where feasible, provide pedestrian sidewalks in all residential areas along both sides of the street.

Some exceptions may be made where alternate paths exist, such as along alley streets, and where undesirable environmental impacts may result.

Program 2.14.G:

Evaluate the feasibility of finishing sidewalks along streets where they are currently lacking.

Program 2.14.H:

Identify areas where sight distance for vehicle drivers and pedestrian safety can be improved with signs, tree placement, landscaping, parking policy, building design, and streetscape. Prepare a program and schedule for implementing these improvements.





Program 2.14.I: Identify areas where crosswalk safety can be improved through better lighting and striping, prohibiting right turns on red at specific intersections, installing pedestrian-activated push buttons for signals, installing a textured or raised paving material, and employing crossing guards for school children. Prepare a program and schedule for implementing these improvements.

POLICY 2.14.2: Discourage street widenings and the removal of on-street parking to ease traffic flow.

GOAL 2.15: **Provide a comprehensive system of pedestrian and bicycle routes which link the various components of the community: employment centers, residential areas, commercial areas, schools, parks, and open space.**

POLICY 2.15.1: Make pedestrian and bicycle circulation, and safety improvements a high priority for transportation funding, utilizing locally generated revenues and State and federal grants.

Program 2.15.A: Construct public improvements that accommodate and enhance pedestrian and bicycle access.

Program 2.15.B: Provide additional trails along the shoreline.

Program 2.15.C: Provide proper signing for improved trails, fire break trails, and interpretive trails.

Program 2.15.D: Improve safety and pedestrian movement by building curb extensions that narrow the overall width required by pedestrians to cross the street at major pedestrian waiting areas at street intersections, sidewalks, and landscaped areas.

Program 2.15.E: Identify areas where adequate lighting for pedestrians in urban areas is needed. Install additional lighting as appropriate.

Program 2.15.F: Widen the Rose Drive/State Park Road at I-780 overpass to accommodate pedestrians and bicycle traffic.

Program 2.15.G: Create a protected landscaped sidewalk for West 7th Street between I-780 and Military West.

POLICY 2.15.2: Encourage the development of pedestrian paths in hill areas as a way to link neighborhoods to schools, parks, employment centers, and convenience commercial destinations.

Program 2.15.H: Continue to implement the pedestrian pathway system in the City's Parks, Trails and Open Space Master Plan especially

linkages between the City's residential neighborhood and commercial districts.

Program 2.15.I: Facilitate the connection of future Benicia-Martinez Bridge pedestrian/bike lanes to the city pedestrian/bike network. Connect paths from existing and proposed regional trail systems to the Boundary Hills and Benicia-Martinez Bridge.

Program 2.15.J: Improve pedestrian and bike access between Downtown and Southampton.



GOAL 2.16: Ensure access needs of individuals with disabilities.

POLICY 2.16.1: Provide for adequate public access in all forms (walks, buildings, transportation) in conformance with the Americans for Disabilities Act (ADA).

Program 2.16.A: In places that accommodate the public, remove barriers to access or provide alternative services when barriers cannot be removed.

Program 2.16.B: Require that publicly sponsored programs, activities and transportation facilities are accessible to individuals with disabilities (including employees).

POLICY 2.16.2: Encourage private entities to maintain places of business that are physically accessible to all.

Program 2.16.C: Assess the cost and feasibility of Policy 2.16.2, including any changes in opportunities or costs for businesses to occupy historic structures.



GOAL 2.17: Provide an efficient, reliable, and convenient transit system.

POLICY 2.17.1: Continue to provide transit service to all—and subsidized paratransit service to all qualified—potential users, including youth, the elderly and the disabled, modifying routes and schedules as demand changes.

Program 2.17.A: Preserve the personal service provided by Dial-a-Ride.

Program 2.17.B: Subsidize transit at a level justified by a cost/benefit study.

Program 2.17.C: Institute a continuing program to evaluate the transit system to ensure it meets the public's needs.

Program 2.17.D: Allow preferential parking for public transit vehicles.

- Program 2.17.E:* Set local priorities and needs for future service, taking into account funding uncertainties for Benicia's and other transit systems.
- Program 2.17.F:* Improve inter-modal coordination of transit services.
- Program 2.17.G:* Provide attractive and pedestrian-friendly transit stops and buses, including bike racks on buses.
- Program 2.17.H:* Provide transit shelters with good visibility and benches, thus enhancing the pedestrian-transit interface.
- POLICY 2.17.2:** Consider nontraditional use of the existing transit system for tours, shuttles, and special events, (e.g., First Street shuttle, First Street to Community Park shuttle, First Street to Arsenal shuttle, State Park shuttle).
- Program 2.17.I:* Optimize the use of existing transit equipment.
- Program 2.17.J:* Consider a shuttle service between large commercial centers.
- POLICY 2.17.3:** Coordinate transit service and trip reduction efforts with other agencies.
- Program 2.17.K:* Provide intercity bus service to Vallejo and Fairfield commensurate with available funding.
- Program 2.17.L:* Coordinate school district/city bus schedules for optimum efficiency.
- Program 2.17.M:* Coordinate transit planning with the Contra Costa Transportation Authority (CCTA) and Solano County, and coordinate future mass transit planning with all other regional efforts.
- Program 2.17.N:* Participate in Major Investment Studies (MIS) to assure that transit alternatives are fully considered.



GOAL 2.18: **Encourage the provision of convenient rail service to Benicia with a station near the Benicia Bridge.**

- POLICY 2.18.1:** Work with BART, Caltrans, BCDC, the Solano Transportation Authority, and MTC in planning a rail station near the Benicia-Martinez Bridge.
- Program 2.18.A:* Consider mixed use, commercial and industrial uses that complement the train station.
- Program 2.18.B:* Plan for convenient auto and transit access to and auto parking at the train station to encourage its use.



GOAL 2.19: Promote a regional (San Francisco, Oakland, Alameda) and local (Martinez, Port Costa, and Crockett) ferry service.

When the waterfront area adjacent to the Benicia Marina is developed and the number of visitors to the foot of First Street increases, a weekend ferry service between Benicia and the historic town of Port Costa or Martinez along the northern shores of Contra Costa County may be feasible.

POLICY 2.19.1: Work with MTC to establish ferry service. Communicate regularly with them regarding plans and funding for ferry service.

Program 2.19.A: Identify ferry service market potential and terminal location options.



GOAL 2.20: Provide a balanced street system to serve automobiles, pedestrians, bicycles, and transit, balancing vehicle-flow improvements with multi-modal considerations.

POLICY 2.20.1: Maintain at least Level of Service D on all city roads, street segments, and intersections.

Exceptions may be allowed where measures required to achieve LOS D are infeasible because of right-of-way needs, impact on neighboring properties, aesthetics, or community character.

Program 2.20.A: Identify areas where it would be beneficial to reduce and divert through vehicular traffic from local residential streets. Implement appropriate neighborhood traffic control programs in these areas.

Program 2.20.B: Locate new development where there is adequate existing or planned future road and highway capacity and where local residential streets will not be significantly impacted.

Program 2.20.C: Encourage use of alleys for commercial loading activities when it will not block driveways or mid-block access to the street.

POLICY 2.20.2: Seek alternatives to road widenings

Program 2.20.D: Continue to identify and implement acceptable alternatives to in-town roadway widening, extensions, and large intersections.

Program 2.20.E: Identify streets where traffic should be slowed.

Program 2.20.F: Consider lane narrowing, driver education, traffic speed alert trailers, and other traffic calming remedies.

Program 2.20.G: Advertise the use of transit, bicycling, and walking for commuting, shopping, recreation, and school trips.

- Program 2.20.H:* Reserve right-of-way for new alternate transportation facilities that contribute to street and roadway congestion relief.
- Program 2.20.I:* Coordinate traffic signal improvements and synchronization and continue to implement timing changes.
- Program 2.20.J:* Develop adequate funding for keeping streets, alleys and sidewalks in good repair.
- Program 2.20.K:* Identify and prioritize transportation facilities maintenance projects for roadways, sidewalks, and off-street trails and paths.
- Program 2.20.L:* Identify areas of the city that are pedestrian-unfriendly and develop corrective plans.
- POLICY 2.20.3:** Maintain Lake Herman Road as a rural, two-lane, curving scenic route.



GOAL 2.21: Encourage Benicia residents and employees to use alternatives to the single-occupant automobile.

- POLICY 2.21.1:** Provide and promote a range of travel alternatives to the use of the private automobile.

“Design Strategies for Encouraging Alternatives to Auto Use Through Local Development Review,” prepared by ABAG and BAAQMD, provides a number of site planning strategies for commercial and residential development that aim at reducing auto use by making pedestrian and bicycle travel more attractive.

- Program 2.21.A:* Advertise the benefits of Transportation Demand Management (TDM) measures and conduct public outreach programs to educate the public about options available within the city.
- Program 2.21.B:* Implement Transportation Control Measures (TCMs) appropriate to Benicia.
- POLICY 2.21.2:** Encourage new development patterns that facilitate bicycling, walking, and transit for commute, shopping, recreation, and school trips.
- Program 2.21.C:* Consider denser, mixed-use developments, particularly in the Downtown area.
- Program 2.21.D:* Consider the feasibility of extending East Second Street from East “L” Street to East “K” Street.



GOAL 2.22: Alleviate traffic congestion near school sites.

- POLICY 2.22.1:** Work closely with the School District in addressing traffic congestion near schools.

- Program 2.22.A:* Develop a plan jointly with the School District for reducing traffic congestion at and near school sites.
- Program 2.22.B:* Encourage the School District to continue the comprehensive crossing guard program.
- Program 2.22.C:* Adjust phasing/timing of signal lights on routes to schools, and consider providing increased crossing guards and/or police direction of traffic.
- Program 2.22.D:* Encourage the School District to implement citywide busing and promote carpools for trips to school.
- Program 2.22.E:* Promote School District provision of adequate off-street parking, drop-off and pickup facilities, and designated carpool parking at each school.
- Program 2.22.F:* Study the need for and feasibility of a pedestrian bridge linking the middle school and high school.



GOAL 2.23: Ensure adequate parking while maintaining aesthetic landscape features.

- POLICY 2.23.1:** Provide adequate on-street and off-street parking.
- Program 2.23.A:* Continue to allow on-street parking where needed for abutting uses (e.g., Military East).
- Program 2.23.B:* Preserve and improve the East Second and "E" Street parking lot. Consider double-deck parking if need warrants.
- Program 2.23.C:* Allow flexible parking requirements for uses smaller than 2,000 square feet.
- Program 2.23.D:* Update parking requirements based on actual local parking generation studies wherever appropriate, and consider parking proximity to transit corridors.
- POLICY 2.23.2:** Reduce the visibility of parking lots.
- Program 2.23.E:* Allow future parking to be divided into smaller lots with generous internal and perimeter landscaping.
- Program 2.23.F:* Recommend parking to be located behind or alongside (but not in front of) buildings, where possible.



GOAL 2.24: Continue to provide safe and direct access to the Industrial Park.

- POLICY 2.24.1:** Continue to ensure public access to private roads in the industrial and Port areas.

- Program 2.24.A:* Investigate establishment of Industrial Park bus service.
- Program 2.24.B:* Investigate alternate routes that would better accommodate access from the freeway to the Port and Industrial Park.
- Program 2.24.C:* Identify solutions to circulation problems associated with truck traffic by maintaining a database of truck-related citizen or business complaints in combination with truck counts and accident data.



GOAL 2.25: Improve auto and non-auto access into the Old Arsenal, without disrupting existing neighborhood, historic, and environmental values.

- POLICY 2.25.1:** Consider alternative modes of transportation to the auto in planning new access and in improving existing routes into the Arsenal.
- Program 2.25.A:* Improve access into the Arsenal from I-680.
- Program 2.25.B:* Depending on City's determination of need and impacts, decide whether to connect the Lower Arsenal with the Downtown, such as through East "H" Street, including bike, pedestrian, and emergency access.

It is important to link the Lower Arsenal area with Downtown for economic development and maximum utilization of the waterfront, historic, and cultural assets. There are two alternatives: (1) open the gate and allow access over the hill to the Lower Arsenal; and (2) open the gate and allow access via Bayshore Road.

The City will investigate alternative alignments, mindful of "H" Street residents' concerns about through-traffic and Benicia Industries' concerns about Port security.



GOAL 2.26: Ensure that scenic and environmental amenities of I-680 and I-780 are not compromised.

- POLICY 2.26.1:** Promote the use of freeway right-of-way for alternative commute methods (e.g., car pool lanes, transit, and off-road bike paths).



POLICY 2.26.2: Encourage the preservation of I-780 as four lanes, but support spot widenings at selected locations (e.g., the approach to the Benicia-Martinez Bridge on/off merge lanes) to address future capacity problems while still maintaining a four-lane mainline freeway.

POLICY 2.26.3: Support Caltrans' Benicia-Martinez Bridge project, advocating the following: (1) continued toll collection in the northbound direction with the toll plaza located at the southern end of the bridge; (2) elimination of existing lane merge problems at the I-680/I-780 interchange; (3) retaining direct access to existing interchanges at East 2nd and East 5th Streets, (4) accommodating rail transit on the bridge in the future, and (5) only widen I-680 upon evaluation of alternatives.

POLICY 2.26.4: Ensure that the Benicia-Martinez Bridge project adequately reflects the community's concerns.

Program 2.26.A: Continue to monitor and comment on Caltrans planning activities and documentation as the bridge planning process continues.



GOAL 2.27: **Ensure an active community deliberation process in response to Caltrans proposals now and in the future.**

POLICY 2.27.1: Monitor Caltrans' planning process for I-680 and I-780 improvements and communicate the City's concerns and priorities to Caltrans.

POLICY 2.27.2: Ensure the continuation of the following City policies in discussions with Caltrans about changes to I-680 and I-780:

- A) Preserve the Lake Herman interchange vista look-out and rest area.
- B) Relocate the Industrial interchange northbound off-ramp and southbound on-ramp from the south end of the Sulphur Creek overcrossing at Bayshore Road to the north end at Industrial Way.
- C) Use the existing toll building at the existing Benicia-Martinez Bridge for a passenger train station for the UP rail line. Provide adequate access to and automobile parking at the station. Provide for the station to accommodate a light rail passenger line on the new bridge.
- D) Preserve direct access to and from I-780 at East Second and East Fifth Streets.

- E) Preserve the existing westbound exit from I-780 at Columbus Parkway and ensure that existing commercial buildings are not removed.
- F) Keep I-780 four lanes. Support spot widenings at selected locations (e.g., the approach to the Benicia-Martinez Bridge on/off merge lanes) to address future capacity problems while still maintaining a four-lane mainline freeway.
- G) Only support the widening of I-680 to six lanes upon evaluation of alternatives.
- H) Do not permit sound walls or retaining walls along I-780. Permit sound walls and retaining walls that the community believes would provide benefits that outweigh drawbacks.

POLICY 2.27.3: Ensure that the Benicia residential and business community is informed about Caltrans' project planning activities, and solicit public input on Caltrans projects.

Program 2.27.A: Review existing plans and work with Caltrans to develop proposals that reflect the consensus.

D. COMMUNITY SERVICES

1. PUBLIC AND QUASI-PUBLIC

Public and quasi-public facilities uses provide a variety of services to the public including police, fire, water, sewer, and education. Local government entities (e.g., the City of Benicia and the Benicia Unified School District) occupy a large portion of Public/Quasi-public lands. In keeping with the nature of these facilities in serving the public, they are distributed throughout the City. Figure 2-7 shows existing public and quasi-public facilities as of 1995.

PUBLIC AND QUASI-PUBLIC GOALS, POLICIES, AND PROGRAMS



GOAL 2.28: **Improve and maintain public facilities and services.**

POLICY 2.28.1: Require that new development not reduce the levels of service in existing neighborhoods below City standards.

Program 2.28.A: Establish standards for city services and facilities, as approved by the City Council (see also Program 2.6.E).



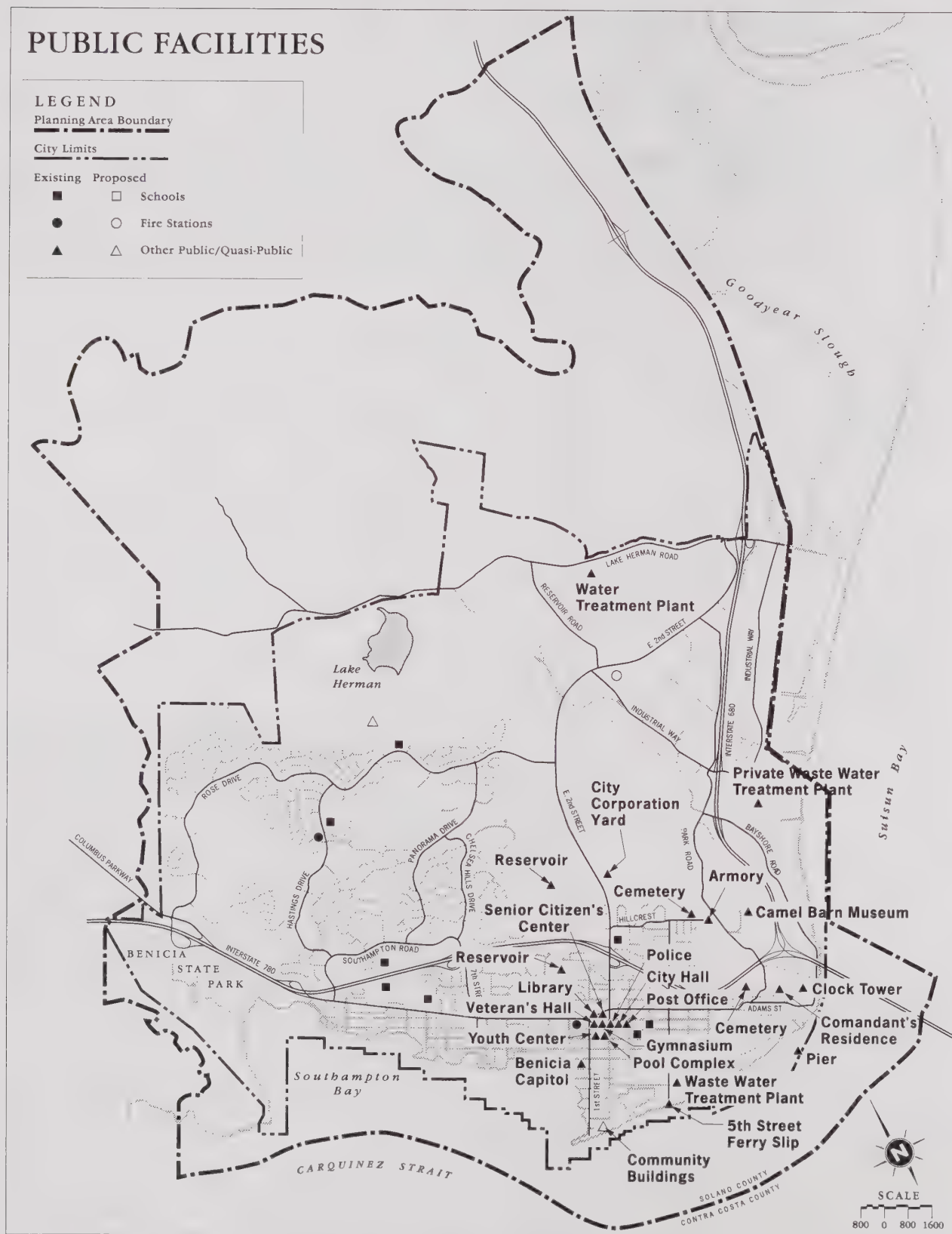
GOAL 2.29: **Provide for churches to locate where conflicts with adjacent land uses will be minimized.**

POLICY 2.29.1: Allow churches outright in community commercial zones and as a conditional use in other zones.



POLICY 2.29.2: Encourage the location and design of church facilities to be compatible with neighboring properties.

POLICY 2.29.3: In any future developments, consider earmarking land for quasi-public uses.



2. PARKS AND RECREATION

The City of Benicia has an extensive park, trail, and open space system, as well as a *Parks, Trails and Open Space Master Plan* (1997) that seeks to elaborate on the existing system by adding parks, bikeways and improved community trails.

STANDARDS

The General Plan provides standards for three categories of City Parks: Regional, Community, and Neighborhood. The categories are defined in Section A, Land Use of this chapter (Chapter 2).

EXISTING PARKS

Benicia has almost 700 acres of existing parks; the largest part of this acreage is in the Lake Herman Regional Park (577 acres). Benicia also has several recreational centers: the Senior Center, City Gym, James Lemos Pool complex, and the Youth Activities Center. The City has a joint use agreement with the Benicia Unified School District that provides for the sharing of facilities. In addition, the City has several parks/recreation facilities not categorized in the Parks, Trails, and Open Space Master Plan. These include one public launch ramp, two fishing piers, and small waterfront parks. Table 2-13 and Figure 2-8 list and locate the City's various parks and recreational facilities. The City's 1997 Parks Master Plan provides a full description of all parks within the City.



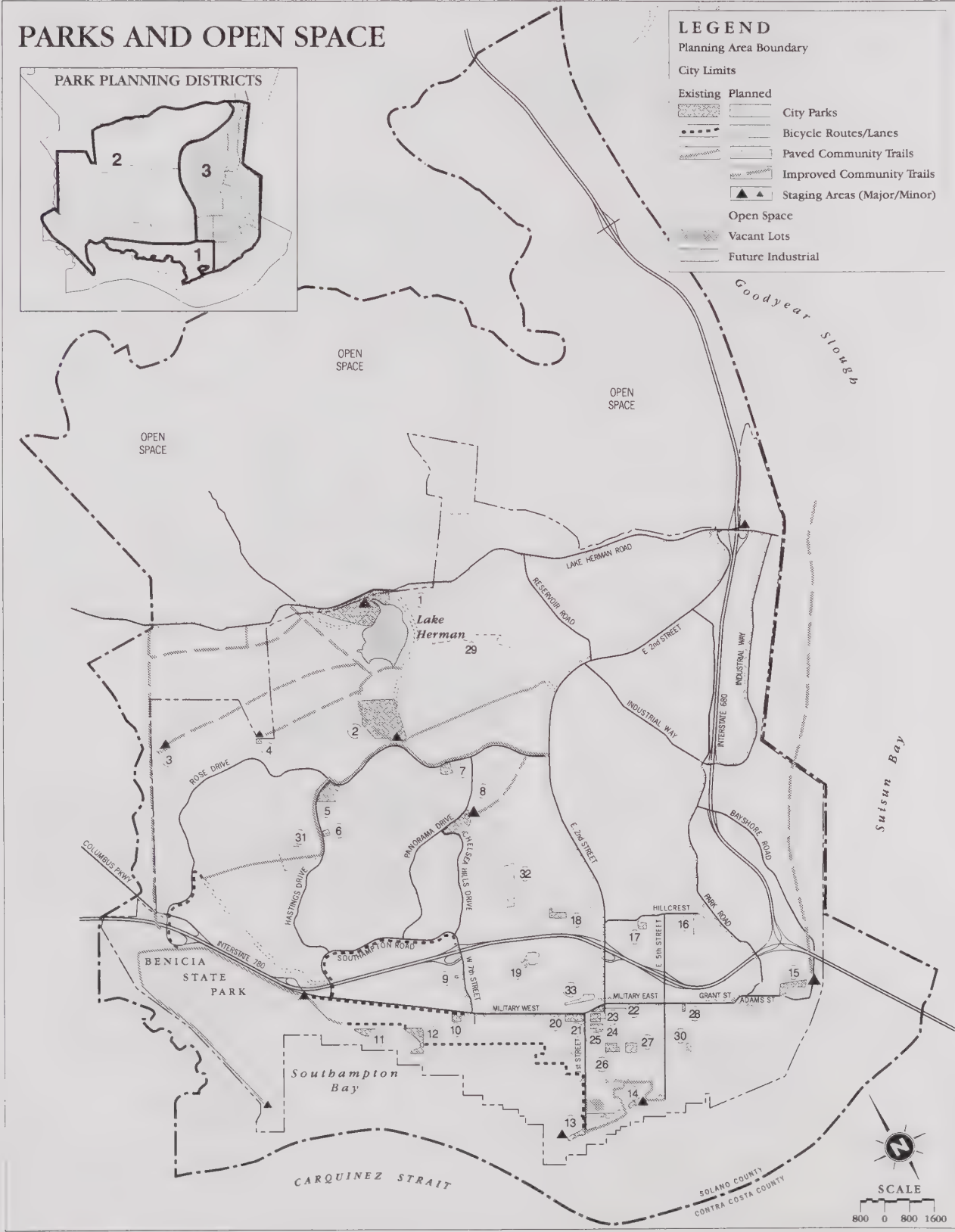


Figure 2-8. Parks and Open Space

Table 2-13. Existing and Future Parks and Recreation Facilities within City Limits, 1995

MAP NO.*	FACILITY NAME	ACRES
1.	Lake Herman Regional Park	577.0
2.	Benicia Community Park	50.0
3.	Channing Circle Park	2.5
4.	Gateway Park	0.5
5.	Jack London Park	7.7
6.	Park Solano	2.0
7.	Frank Skillman Park	3.0
8.	Southampton Park	6.0
9.	Benicia Views II	0.5
10.	Willow Glen Park	4.5
11.	Matthew Turner Park (West 12th Street)	2.5
12.	West 9th Street Park	6.0
13.	Point Benicia Spit	0.3
14.	Turnbull Park	0.3
15.	Clocktower	—
16.	Francesca Terrace	5.0
17.	Duncan Graham Park	2.0
18.	Overlook Park	3.5
19.	Bridgeview Park	4.5
20.	City Park	4.5
21.	Civic Center Park	3.5
22.	Benicia Senior Citizens' Center	—
23.	Benicia City Gymnasium	—
24.	James Lemos Pool Complex	—
25.	Youth Activity Center	—
26.	Fitzgerald Field	4.0
27.	Little League Field	4.0
28.	Ethelree Saraiva Park	0.5
29.	Park D-7 (future)	3.5
30.	Bottle Hill Park (future)	0.5
31.	Hastings Drive Neighborhood Park (future)	10.0
32.	Perth Way Neighborhood Park (future)	8.0
33.	St. Catherine's Wood Neighborhood Park (future)	0.5
SUBTOTAL		716.8
	Benicia State Recreation Area	469.0
	Benicia State Capital Historic Park	1.5

Source: *Parks, Trails, and Open Space Master Plan*

*These numbers refer to locations on Figure 2-8.

PARK AND RECREATION FACILITY NEEDS

The Parks, Trails and Open Space Master Plan evaluated the existing park and recreation system to determine future needs for Benicia. The analysis was conducted for the City as a whole, and for three districts divided along census tract boundaries (see inset in Figure 2-8):

- District 1 is the Downtown and Old Town area, bounded on the north by Military Street.
- District 2 is the Southampton subdivision. This district accounts for almost 70 percent of the City's population.
- District 3 is the eastern part of the City. It includes a few older residential areas on the east side of East Second Street, but most of it is developed for industrial uses.

Overall Population

The *Parks Master Plan* compared acreages of existing and planned park land in relation to both the existing and projected population of the City. Using the standard per acre shown in Table 2-14, the City has more than adequate regional parkland, but is deficient in community and neighborhood parks. The *Parks Master Plan* identified a shortfall of 35 acres of neighborhood park and 18 acres of community park in 2010.

Table 2-14. Amount of Existing Park Land per Capita

PARK TYPE	ACRES	ACRES/1,000 PEOPLE	STANDARD (ACRES/1,000 PEOPLE)
Regional Park	577	20	10
Community Park	50	2	2.5
Neighborhood Parks	59	2	3.5
Recreational Facilities	8	0.3	—
Totals	694	24.3	

District Population

Using the standards shown in Table 2-14 in the Land Use section, the *Parks Master Plan* found differing parkland needs by district. District 1 has an adequate park land through 2010. District 2 will be deficient by 33 acres of neighborhood park land in the year 2010. District 3 will be deficient by 5 acres of neighborhood park land in the year 2010. Thus most parkland deficiency is in District 2.

Distance

The *Parks Master Plan* used a half-mile mile radius standard to evaluate each neighborhood park. Using this standard, major service gaps were found in the western and southwestern portions of District 2, and the eastern tip of Downtown (District 1).

Facility Type and Description

The number of recreational facilities provided in the City and in each district was compared with the recreational facility standards to determine which areas were deficient in given facilities. The evaluation determined that there will be a citywide deficiency of six tennis courts by 2010 (four in District 2; two in District 3).

FUTURE PARK DEVELOPMENT

Several sites are shown on Table 2-13 as future parks. A brief description follows.

Park D-7. (Map No. 29). This 3.5-acre neighborhood park is planned for the northeastern portion of the Southampton development. Proposed uses range from a community center, public pool, and tennis courts, to volleyball courts, playgrounds, and croquet courts.

Bottle Hill Park. (Map No. 30). This 0.5-acre neighborhood park, in the southeastern portion of the Downtown area, will provide panoramic views of the Carquinez Strait, and sheltered areas for a tot lot, and picnic facilities.

Hastings Drive Neighborhood Park. (Map No. 31). This proposed 10-acre park is located in the Southampton open space in the central western portion of the Southampton development. The site contains a small drainage channel and is surrounded by existing homes. The topography in the area would necessitate terracing for facilities. The park will include a multi-purpose playing field, tennis court, basketball courts, playground, grass play area, picnic area, path, and benches.

Perth Way Neighborhood Park. (Map No. 32). Perth Way Neighborhood Park is a proposed 8-acre neighborhood park located in the open space in the eastern portion of the Southampton development. The site is relatively flat, but high in elevation, providing views toward Suisun Bay. Planned facilities include a multi-purpose playing field, tennis court, basketball court, playground, grass play area, picnic area, path, and benches.

St. Catherine's Wood Neighborhood Park. (Map No. 33). This 0.5-acre neighborhood park, located directly north of Solano Square at First Street, will include a playground, an entry plaza, and a seating area.

PARKS AND RECREATION GOALS, POLICIES, AND PROGRAMS

Goals, policies, and programs in this section call for adding parks and recreation facilities while maintaining and improving existing parks and recreation facilities.



GOAL 2.30: **Maintain and improve existing parks and recreation programs.**

POLICY 2.30.1: Enhance existing city recreation facilities and programs.

Program 2.30.A: Develop programs that promote higher and better use of Benicia's recreation facilities and programs.

Recreation facilities include parks and buildings.

Program 2.30.B: Conduct periodic surveys about ways to improve City recreation facilities and programs.

Program 2.30.C: Direct the Parks, Recreation & Cemetery Commission to annually audit and recommend additions to and updates of the Parks Master Plan.

Program 2.30.D: Establish cooperative relationships with public agencies and applicable public interest groups in developing plans for parks and recreation programs.

Program 2.30.E: Distribute special park features (e.g., gazebos, bandstands, fountains, sculpture, overlooks, etc.) at key locations in neighborhood and community parks to enhance neighborhood character, provide a focus for a park, or create a place for viewing.

Program 2.30.F: Continue to share City park facilities with the School District and consolidate park and school lands wherever feasible.

Program 2.30.G: Develop a process to evaluate existing facilities and determine their utilization.

POLICY 2.30.2: Increase resident awareness of the available recreational opportunities in the city.

Program 2.30.H: Develop public information materials (including a color map and table of citywide recreation facilities), and a comprehensive sign system about parks and recreational opportunities.

POLICY 2.30.3: Incorporate water conservation into park planning and design.

Program 2.30.I: Use primarily native plant species and other drought tolerant plants in all parks and open space areas.



Program 2.30.J: Use drip irrigation and other water efficient irrigation methods in all parks.

POLICY 2.30.4: Protect plant and animal life as part of any park improvement project involving sensitive habitat areas of local or regional significance.

POLICY 2.30.5: Design park improvements to facilitate accessibility and maintenance.

Program 2.30.K: Regulate concessions stands in park and recreation areas consistent with the Parks, Trails, and Open Space Master Plan.

POLICY 2.30.6: Continue to establish appropriate uses and programs for Lake Herman Regional Park that (a) preserve and maintain its natural condition and scenic value while providing for increased, passive, low impact recreational opportunities and (b) maintain and/or enhance Lake Herman's wetlands to attract a variety of wildlife to the area; (c) preserve rock outcroppings and creekside vegetation.



GOAL 2.31: **Maintain safety at parks/open space.**

POLICY 2.31.1: Improve and maintain safety in existing parks and design park improvements to facilitate security and policing.

Program 2.31.A: Continue coordination with the City police department to provide mobile patrol of parks and open space areas.

Program 2.31.B: Continue coordination with the City fire department regarding fire season warning and control, emergency vehicle access, support facilities, and response.

Program 2.31.C: Continue to coordinate with neighborhood watch programs to provide added security at parks, along trails, and in the open space areas.

Program 2.31.D: Coordinate with the Benicia Unified School District regarding safety concerns at joint use facilities.



GOAL 2.32: Expand the City's park system to accommodate future community needs.

POLICY 2.32.1: Establish new parks/recreation areas.

Program 2.32.A: Ensure that lands dedicated for park land are of sufficient in size to accommodate the uses and facilities proposed, graded for those uses, and free of hazardous and toxic waste materials for each park site.

Program 2.32.B: Regularly monitor County, State, and federal funding sources and apply for loans and grants to acquire, develop, and rehabilitate park land and facilities.

Program 2.32.C: Identify and incorporate the needs of neighborhoods in developing new parks and facilities.

POLICY 2.32.2: Continue to develop and enhance recreational benefits of the shoreline and seek public access along the waterfront.

Program 2.32.D: Explore public access on private waterfront through collaborative planning or a development review process.

BENICIA STATE PARKS

The State Department of Parks and Recreation maintains and operates two parks in Benicia: the State Capitol Historic Park and the Benicia State Recreation Area. The 1.5 acre State Capitol Historic Park is located on the corner of First and West G Streets. It includes the building used as California's State Capitol from 1853–1854, the Fischer-Hanlon House, associated historic structures and Victorian Garden. The 469-acre Benicia State Recreation Area is located in western Benicia along the Benicia-Vallejo border, southwest of I-780. This recreation area is predominantly marsh but also provides extensive hiking, jogging, and biking trails, a fishing area, and picnic areas. (See Chapter 3, Section D, for more information on trails in the Planning Area.)



GOAL 2.33: Assure long-term maintenance of the State Parks.

By itself, the City may not be able to assure maintenance of a State park. This implies working with the State to achieve the goal.

Program 2.33.A: Develop a Strategic Plan for addressing State park issues.

Program 2.33.B: Work with the State to maintain and improve both parks and identify needed improvements.

For example, utility lines that cross the State Recreation Area should be re-routed.

Program 2.33.C: Work with the State to keep the State Recreation Area open to the public for day use.

Program 2.33.D: Work with the State to assure that the Capital maintains maximum opening hours for public enjoyment and use.

3. SCHOOLS

EXISTING FACILITIES

Public and Private Schools

Benicia is served by the Benicia Unified School District (BUSD). Within the Benicia city limits are five public and one private elementary schools, one public and one private intermediate



school, one public high school, and one continuation high school. For the 1997-98 school year, fall district-wide enrollment was 5,381. Enrollment figures for each school facility are shown in Table 2-15.

Table 2-15. School Enrollment and Capacity, 1997-1998

SCHOOL	GRADE LEVEL	ENROLLMENT 1997-1998	CAPACITY 1997-1998
Public Schools			
Semple Elementary	K-5	448	516
Mills Elementary	K-5	374	474
Mary Farmer Elementary	K-5	450	515
Henderson Elementary	K-5	657	671
Turner Elementary	K-5	478	518
Benicia Middle School	6-8	1,312	1,351
Benicia High School	9-12	1,586	2,089
Liberty High School	9-12	76	86
Private School			
St. Dominic's	K-8	346	346

FUTURE FACILITIES

The number of students expected in Benicia's schools, and the need for additional facilities is closely related to the amount of new housing. The District has some capacity to accommodate existing infill potential but can not accommodate significant new development.

The student generation rates used by the City and BUSD based on 1990-91 statistics assume 0.10 elementary school students for a multi-family housing unit and 0.30

⁸ Capacity can vary according to the distribution of portable classroom facilities among the various campuses. In addition, as new construction is completed, these figures must be revised.

elementary school students for a single family housing unit. For middle school, the rates are 0.045 for a multi-family unit and 0.14 for a single-family unit. For high school, the rates are 0.055 for a multi-family unit and 0.16 for a single-family unit.

Based on these generation rates the following table illustrates existing and projected enrollment to Year 2002.

Table 2-16. School Enrollment, 1997 and Projected

SCHOOL	ACTUAL 1997	ACTUAL 1998	PROJECTED 2000	PROJECTED 2002
Public Schools				
K-5	2,425	2,407	2,407	2,348
6-8	1,303	1,312	1,350	1,420
9-12	1,550	1,662	1,938	2,014
PUBLIC SCHOOL TOTAL	5,278	5,381	5,682	5,782
Private School	346	346	346	346

Source: Benicia Unified School District; St. Dominic's Priory School

Given limited residential buildout in the City, no new schools are anticipated. The high school is developing a progressive capacity master plan for the expansion of facilities to make room for new students on the existing 47-acre site. Increasingly, school districts rely on development permit fees to generate funds for new school facilities. Based on 1997 fee rates, the District calculates that about one-third of the cost of the new school facilities needed to serve new development generated by this Plan would be funded.

SCHOOLS GOALS, POLICIES, AND PROGRAMS

Goals in this section stress City/School District cooperation.



GOAL 2.34: **Ensure adequate school facilities to serve all residential areas.**

POLICY 2.34.1: Approve new residential projects only if adequate school facilities are available or will be available when needed.

Program 2.34.A: Continue to work with the School District to identify appropriate sites if needed for future expansion and new construction of public schools.



GOAL 2.35: Cooperate with the School District to provide opportunities for citizen use of the schools.

POLICY 2.35.1: Continue to seek innovative ways for the City to use school facilities and grounds jointly with the School District.

Program 2.35.A: Continue to maintain and implement the joint-use agreement between the City and BUSD.

Program 2.35.B: Maintain zoning that, in the event any schools are closed or relocated, will support the reuse of closed school sites for public or quasi-public uses.

4. WATER

Sulphur Springs Creek Watershed and Lake Herman

Sulphur Springs Creek and its main tributary, Paddy Creek, form the largest watershed within the Planning Area. Of the approximately 18 square mile watershed area, the upper six square miles lies outside of the Planning Area in the Vallejo Sphere Of Influence. Paddy Creek, which drains a three square mile watershed, joins the lower reach of Sulphur Springs Creek just below the Lake Herman outlet.



The Lake Herman reservoir on Sulphur Springs Creek stores watershed runoff along with excess water from the North Bay Aqueduct, a component of the State Water Project and the City's principal potable water supply. The reservoir is typically filled during the spring and drawn down during the summer and fall. Both the City and Exxon draw on the reservoir during periods of high demand.

WATER SUPPLY

Benicia has a long history of having a local shortage of fresh water. Benicia's potable water is currently supplied by the California State Water Project (SWP) through the North Bay Aqueduct (and the City of Vallejo in the event of a water shortage). The City's Water Treatment Plant is located on Lake Herman Road and was expanded in 1989.

WATER QUALITY

Water quality problems typical of commercial and residential land uses affect aquatic habitat and stormwater discharge throughout the urbanized portions of the Planning Area. Lake Herman, which is the City's back-up water supply, is considered a

eutrophic water body by the Regional Water Quality Control Board (RWQCB). Eutrophic waters are characterized by high nutrient loads, excessive algal and aquatic vascular plant growth, low water clarity, and reduced oxygen concentrations in bottom waters. However, the City also stores good quality North Bay Aqueduct water in Lake Herman, and the current mixture of water in the lake is deemed sufficient to meet water quality standards.

While no specific data are available on water quality for other surface waters in Benicia, it is reasonable that water quality in other minor creeks and drainages would be similar to that found in other urbanized portions of the Bay Area, since Benicia is subject to the same point and non-point sources as other jurisdictions.

Groundwater

The Public Safety Background Report lists a number of confirmed and potential groundwater contamination sites throughout the City. However, Benicia's reliance on imported SWP water for its municipal water supply means that the groundwater quality problem sites have little significant impact on drinking water quality. Instead, they have the potential to affect water quality in local creeks and the receiving waters in the Carquinez Strait and Suisun Bay, since groundwater eventually flows to surface locations.

Groundwater contamination upstream from Lake Herman could reach the City's water supply. Two upstream contamination sites have been identified at Syar Quarry and the Hastings Mercury Mine. While these sites appear to be of relatively lower concern than downstream sites, they should be monitored.

WASTE WATER TREATMENT

Benicia's sewer system dates from the time when sanitary sewers and storm drains flowed together into the Carquinez Strait. Separation of sanitary from storm water flows was completed and interceptors were constructed to carry waste water to the Waste Water Treatment Plant (WWTP) at the lower end of East Fifth Street.

In June 1996, Benicia residents passed a bond measure to upgrade the City's wastewater treatment plant (WWTP). The upgrade will (a) increase the WWTP's firm capacity to sufficiently serve existing development and projected infill development within existing City Limits, (b) eliminate excessive noise, odors, and the use of gaseous chlorine from the Plant, (c) address problems with deteriorating equipment and facilities, and (d) create a flood wall along the southern and eastern borders of the Plant.

WATER GOALS, POLICIES, AND PROGRAMS

Goals, policies, and programs focus on meeting the needs of the existing and future development envisioned by this Plan with an adequate supply of high quality drinking water and sufficient wastewater treatment capacity.



GOAL 2.36: Ensure an adequate water supply for current and future residents and businesses.

POLICY 2.36.1: Approve development plans only when a dependable and adequate water supply to serve the development is assured.

POLICY 2.36.2: Continue to pursue and secure adequate water sources of the highest quality available.

Program 2.36.A: Pursue use of reclaimed wastewater—especially for major industrial users—where feasible.

POLICY 2.36.3: Implement measures to reduce water consumption.

Program 2.36.B: Initiate water conservation programs and conduct drought contingency planning.

Program 2.36.C: Continue to implement City-adopted water conservation Best Management Practices (BMP). (see Glossary)

Program 2.36.D: Continue to require development to utilize adopted City standards for low-water-use landscaping.

POLICY 2.36.4: Encourage public and private uses to minimize water use and to recycle processed water whenever and wherever feasible.

Program 2.36.E: Promote the retrofitting of public buildings with water conservation features.

Program 2.36.F: Assist hospitality-related businesses to actively promote water conservation.



GOAL 2.37: Identify and preserve groundwater resources.

POLICY 2.37.1: Work with the RWQCB to protect groundwater quality.

POLICY 2.37.2: Ensure the cleanup of groundwater contamination resulting from the IT Panoche Hazardous Waste Facility.



GOAL 2.38: Protect water quality.

POLICY 2.38.1: Continue to require the use of feasible and practical Best Management Practices (BMP) to protect receiving waters from adverse effects of construction and urban runoff.

Program 2.38.A: Continue the Storm Water Pollution Prevention Program (SWPPP) and the Industrial Pretreatment Program, and continue to implement the Erosion Control Ordinance.

Such measures would include providing water conservation literature to visitors and tourists and installing a full range of water-conserving fixtures in hotels and restaurants.

**GOAL 2.39:**

Provide safe drinking water and improve its taste and odor.

POLICY 2.39.1:

Ensure that water quality goals are consistently met.

Program 2.39.A:

Continue to cooperate in regional efforts by organizations such as the CALFED Program to improve the quality of the City's source water.

Program 2.39.B:

Continue to optimize treatment operations in conjunction with the implementation of the City's five- and 10-year Capital Improvements Programs.

Program 2.39.C:

Educate the public about City efforts to improve the taste and odor of its drinking water.

**GOAL 2.40:**

Ensure adequate wastewater treatment capacity to serve all development shown in the General Plan.

POLICY 2.40.1:

Approve changes in land use designations for new development only if adequate wastewater treatment capacity is assured.

POLICY 2.40.2:

Promote use of reclaimed wastewater where feasible.

Program 2.40.A:

Prepare, adopt, and implement a sewer maintenance and replacement program.

Program 2.40.B:

Continue to implement the City's Wet Weather Management Plan.

POLICY 2.40.3:

Encourage developments with projected high strength discharges to reduce pollutants directly to the City's wastewater system.

Program 2.40.C:

Educate developers about recycling and other technological methods where feasible.

Program 2.40.D:

Continue to pursue the City's Pollution Prevention Program for all users of the City's wastewater system including commercial, industrial, and residential.

Program 2.40.E:

Continue to pursue the City's pretreatment program for industrial dischargers.

**GOAL 2.41:**

Minimize wwTP operational upsets, potential discharge of inadequately treated wastewater, and the emission of odor and noise.

POLICY 2.41.1:

Continue efforts to replace the gaseous chlorine system with a less hazardous chemical (such as a liquid chlorine system) that

will address the potential safety impacts to the neighborhood surrounding the WWTP.

POLICY 2.41.2: Continue to work with neighbors to implement programs that minimize odor, noise, and potential safety impacts to the neighborhood surrounding the WWTP.

5. RECYCLING GOALS, PROGRAMS, AND POLICIES



GOAL 2.42: Enhance the recycling of solid waste.

POLICY 2.42.1: Strive to accomplish the mandated objectives of the California Integrated Waste Management Act.

Program 2.42.A: Adopt and implement a Source Reduction and Recycling Plan (SRRP) and Hazardous Household Waste Plan (HHWP) which include components for waste characterization, source reduction, recycling, composting, special waste diversion, education, public information, disposal facility capacity, funding, and the safe use, disposal, and recycling of household hazardous materials.

Program 2.42.B: Encourage local recycling facilities to be available to the public.

Program 2.42.C: Pursue establishment of curbside service that would pick up and compost yard waste and make it available to City residents for a reasonable cost.

6. UTILITIES

The City of Benicia owns and operates its own water and wastewater treatment plants. Additionally, the City owns a seven acre corporation yard, where maintenance equipment is stored and maintained.

POWER AND ENERGY USE

Benicia's principal sources of power come from natural gas and electricity supplied by the Pacific Gas and Electric Company. The regional supply system which feeds Benicia is a closed loop system; thus interruption of any single trunk line would not result in a complete blackout. No reliable estimate of future demand for power is possible due to variables of energy availability and the effects of the economy on new construction. No immediate limitations on supply capability are forecast.

TELECOMMUNICATIONS

Telephone communication is generally provided by Pacific Bell to Benicia. Century Cable provides television cable for subscribers in Benicia.

Growth and change in the telecommunications field has resulted in unprecedented demand for new commercial antenna and associated equipment. The antennas and associated structures can pose aesthetic problems because of their size, location, or number. The City controls antennas and similar structures through the use permit process.

UTILITIES GOALS, POLICIES, AND PROGRAMS



GOAL 2.43: **Allow installation of telecommunications equipment and distribution networks that maintain and protect health, safety, and quality of life and avoid visual clutter.**

POLICY 2.43.1: Minimize the visual impacts of siting exposed commercial antenna structures in scenic corridors and residential and historic districts.

Program 2.43.A: Establish design requirements for commercial antennas and associated equipment and distribution networks.

3. COMMUNITY IDENTITY

Benicia is committed to preserving and enhancing its unique geographic and cultural inheritance. It is located at the gate of California's great waterways. The City's heritage and resources are described in *Gateway to the Inland Coast: The Story of the Carquinez Strait* by Andrew Neal Cohen, (1996, California State Lands Commission); *Great Expectations: The Story of Benicia California*, by Richard Dillon (1980, Benicia Heritage Books); and *Benicia: Portrait of an Early California Town*, by Robert Brueggemann (1980, 101 Productions).

A. HISTORIC RESOURCES

Benicia has a rich and fascinating past: historic buildings, archaeological sites, and the traditions and folkways of the community's diverse residents. These resources—all part of Benicia's cultural heritage—provide continuity with the past, create jobs, improve housing, offer a pleasing visual setting, enhance the quality of life, and have the potential to draw thousands of visitors. Appendix B of the Historical and Archeological Background Report (March 1996) lists Benicia's historic landmarks, resources, and buildings. Figure 3-1 is a diagram of Benicia's historical sites.



1. NATIVE AMERICAN PERIOD

The Vallejo-Benicia area was originally settled by the Southern Patwin group of Native Americans. The Southern Patwin inhabited areas west of the Sacramento River and north of the Carquinez Strait. By the beginning of the 20th century, the Southern Patwin were extinct.

The Patwin were a hunting and gathering society that depended mostly on acorns and marine supplies for sustenance. They settled next to water. The nearest Patwin villages definitely located are on the Napa River and near Fairfield, and there are mortar sites at the Benicia State Recreation Area. Although early explorers reported seeing villages on the north shore of the Carquinez Strait and mapped a village at the head of Southampton Bay, it remains unclear if this region was regularly inhabited, how it was utilized, and who used it.

2. HISPANIC PERIOD

Between the 1820s and 1840s, the Spanish parceled out the land around Benicia in large land grants to officers and their families. A large Spanish land grant—the Soscoe land grant of Rancho Suscol—covered what were to become the future sites of both Vallejo and Benicia. Rancho Suscol was obtained by General Mariano Vallejo in 1844 from Governor Micheltorena.

This land ownership pattern lasted until the Mexican-American War, after which California was granted to the United States as part of the Treaty of Guadalupe Hidalgo. California was admitted into the union in 1850.

3. AMERICAN PERIOD

In 1846, Robert Baylor Semple, an immigrant from Kentucky, arrested General Mariano Vallejo and persuaded his prisoner to deed him half-interest in a tract of Rancho Suscol. Semple founded Benicia that same year, named in honor of General Vallejo's wife.

The Benicia Arsenal, located on a large tract of land east of the community and overlooking the Strait, was acquired between 1847 and 1849 by the federal government for use as a military reservation. Several army installations preceded the Arsenal, which was named the "Benicia Arsenal" in 1852. It was one of five permanent arsenals in the country and the first on the Pacific Coast.

In 1850, Benicia and Monterey were the first two cities in the State of California to incorporate. Also in 1850, Benicia was named the government seat for Solano County. Soon thereafter, Benicia was established as a port of entry by the United States Congress. On February 4, 1853, the State Legislature voted to move into Benicia's new City Hall and make it the State Capital.

HISTORICAL SITES

- | | | |
|----------------------------------|----------------------------------|-------------------------------------|
| 1. Guard House | 14. St. Mary's School Site | 27. "Solano Hotel" Site |
| 2. Clock Tower | 15. Captain Walsh Home | 28. What-Not Shop |
| 3. Commandant's Home | 16. St. Catherine's Academy Site | 29. "Salt Box" House |
| 4. Camel Barns | 17. First Protestant Church Site | 30. "Washington House" |
| 5. Powder Magazine | 18. Masonic Temple | 31. Gold! |
| 6. Post Hospital | 19. St Paul's Church | 32. Tannery Sites |
| 7. Post Cemetery | 20. St. Paul's Rectory | 33. Jurgensen's Saloon |
| 8. St. Dominic's Cemetery | 21. Mills College Site | 34. Pony Express |
| 9. "Benicia Boy" | 22. Peabody Hospital Site | 35. Cannery Sites |
| 10. Pacific Mail Docks | 23. "California House" Site | 36. Transcontinental Railroad Depot |
| 11. St. Dominic's Church | 24. "Bella Union Saloon" | 37. Train-Ferry Docks Site |
| 12. St. Augustine's College Site | 25. Early Capital | 38. Turner Shipyards Site |
| 13. Mizner Homesite | 26. Fischer-Hanlon House | 39. Corbett-Choynski Fight Site |
| | | 40. Commodore Jones Point |

 Downtown Historic District



Figure 3-1. Historic Sites

Benicia was the State Capital for only a year. In 1854 the Legislature was persuaded to relocate to Sacramento. In 1859, the county seat was moved from Benicia to Fairfield.

Benicia was also home to the earliest of California's educational institutions. Several schools were established in Benicia in the mid-19th century, including Dominican College and Mills College, though both campuses were relocated by 1900. Benicia was home to the state's first official Masonic Hall, built in 1850, and the depot and shops of the Pacific Mail Steamship Company—the first large industrial enterprise in California.

In the late 1800s, Benicia was a center for agricultural and mineral production. The first railroad ferry west of the Mississippi River began service in 1879 at the foot of

First Street. By 1880, one-third of all leather produced in California was manufactured at three locations in Benicia, primarily at the foot of First Street.

4. ARCHAEOLOGICAL SITES

One known archaeological resource is an underwater site at the Matthew Turner Shipyard State Park. There lie the remains of the Stamboul, originally designed and built on the east coast to ship ice from New England to India, then converted to a whaling ship. The park is a National Register of Historic Places District.

Six other archaeological sites may also exist within Benicia's City Limits. One may be located in the vicinity of Lake Herman Road and the Suisun Bay marsh. The other potential sites are located in the Arsenal and Downtown.

5. HISTORIC BUILDINGS, SITES, AND AREAS

WATERFRONT

Much of Benicia's history was influenced by its location along the Carquinez Strait, where the rivers of the Central Valley that flow into San Francisco Bay shaped the transcontinental railway and the international shipping trade. Benicia's waterfront and transportation activity molded its social, commercial, and military history. Primary industries—tanneries, canneries, and shipyards—located along the waterfront.

The waterfront has been the subject of several governmental plans. A Special Area Plan for the Benicia Waterfront was completed in 1977 by the San Francisco Bay Conservation and Development Commission. The Benicia Urban Waterfront Restoration Plan was prepared by the City in 1991 for the California State Coastal Conservancy Urban Waterfront Program. The Plan focused on the 24 acres of Downtown bounded by the





Carquinez Strait to the south and west, F and B Streets to the north, and the marina to the east. It sought a balance between the needs to preserve the history of the area, to preserve open space, to enhance access to the waterfront, and to create new activities and commerce.

ARSENAL

The Benicia Arsenal was established in 1852 on 345 acres. The buildings were developed to serve the needs of different Army sections that used the land. Residential areas and quarters were scattered throughout the site. Along with 24 frame, brick, and stone structures built between 1854 and 1911, there are many newer buildings constructed during World War II.

The Arsenal was deactivated in 1963 and the Defense Department transferred ownership to the City of Benicia in 1965. The federal government transferred public trust lands within the Arsenal's waterfront to the State. The State granted these lands to Benicia to be managed according to the terms of the grant and consistent with the public trust doctrine, a common law generally immune from legislative change.

At first the City leased land and buildings to Benicia Industries, Inc. Eventually the City transferred title to much of the Arsenal to Benicia Industries to develop the Industrial Park and operate the Port. The City, however, retained ownership of several of the most historically significant structures, including the Commandant's house, the Clocktower building, the Camel Barns, and one of the original powder magazines.

The Arsenal area includes four distinct historic districts included on the National Register of Historic Places, and is also registered as State Historical Landmark No. 176. To preserve these historic resources, the City adopted the Arsenal Historic Conservation Plan in 1993. This plan includes goals, objectives, design guidelines, and criteria to guide development and alterations to existing structures.

Recently remodeled live/work spaces accommodate part of the Benicia arts community. Thus the Arsenal includes a mix of residential, commercial, and industrial uses similar to the historic mix of uses during its long period of military use.



DOWNTOWN

Benicia's Downtown, centered on First Street from the waterfront to Military, is the historic and cultural heart of the City. Settlement in the Downtown area began soon after the town was platted in 1847. Streets were laid out without regard to topography in a rectangular grid that extended into the water. Growth intensified when the State Capitol was briefly located in Benicia from 1853-1854. Through the remainder of the 19th century, development spread north from the waterfront, concentrated along two ridges of land that ran south from the highlands, to the Strait.

Recognizing the importance of Benicia's historic Downtown, the City created an expanded historic district and adopted the Downtown Historic Conservation Plan in 1990 (amended 1992). The Downtown Historic District includes properties along both sides of First Street from Solano Square (Military) to the waterfront, and for several blocks to the east and west of First Street. The district was created not only to preserve historic buildings, but to help maintain and enhance the variety of activities that make up the historic quality of the area.

6. HISTORIC PRESERVATION

Downtown has been recognized by Benicia as a historic district since 1969. However, its boundaries originally encompassed only 150 feet on either side of First Street from A Street to Military. This area represented the historic commercial spine of Downtown, but it omitted much of the surrounding historic residential neighborhood, the development of which was inextricably linked to First Street.

In 1987, the City enacted a provision within its zoning ordinance for a special historic overlay district that could be combined with any underlying zoning district. In 1989, based on extensive surveys and documentation by volunteers, consultants, and historians, the City identified two potential historic districts: one encompasses the Downtown commercial and residential area centered along First Street, and the other falls within the boundaries of the former Benicia Arsenal. In 1990 and 1993, the city prepared and adopted conservation plans for the Downtown and Arsenal historic overlay districts respectively.



GOAL 3.1: **Maintain and enhance Benicia's historic character.**

POLICY 3.1.1: Encourage reuse of historic buildings; if feasible, encourage relocation rather than demolition.

Program 3.1.A: Continue to maintain a current inventory of historic and architectural resources in the city.

POLICY 3.1.2: Enhance the economic potential of historic and architectural assets.

POLICY 3.1.3: Preserve historic trees and landscapes. (Refer to the Arsenal Historic Conservation Plan, November 1993, for guidance on historic trees and landscaping.)

Program 3.1.B: Become a Certified Local Government (CLG) by applying to the State Department of Historic Preservation. (See explanation below.)

The CLG program gives local authorities the ability to designate local historic districts, structures, and sites and to have more direct participation in federal and statewide historic preservation programs. CLGs are eligible for special matching grants for projects that further local historic preservation objectives.

Completion of an historic resources inventory and creation of a local Historic Preservation Commission would qualify Benicia as a CLG. Benicia would then be eligible for federal funds that are available only to CLG cities.

Program 3.1.C: Define the boundaries necessary to preserve the historical significance of the Camel Barn complex.

Program 3.1.D: Continue to work and cooperate with the Benicia Historical Society on historic preservation issues.

POLICY 3.1.4: Promote the preservation and enhancement of historic neighborhoods, commercial areas, and governmental districts.

POLICY 3.1.5: Permit new development, remodeling and building renovation in historic districts when consistent with the policies of the applicable Historic Conservation Plan.

POLICY 3.1.6: Promote restoration of public and privately-owned historic and architecturally significant properties.

Significant City-owned structures in danger of deterioration include the Commanding Officer's Quarters, Powder Magazine, Railroad Depot, and Von Pfister Adobe. Other historic and architecturally significant properties where restoration efforts should be focused are the Arsenal area and the Camel Barn complex and sites.

Program 3.1.E: Develop a program for inspections of historic structures.

Program 3.1.F: Seek public and private funding for historic preservation and maintenance.

Program 3.1.G: Develop a program for property tax incentives.

The City can encourage the rehabilitation of privately owned historic buildings by providing potential buyers with information about California's Mills Act and federal Investment Tax Credits.

Program 3.1.H: Consider waiving or reducing building permit fees for qualified work necessary to rehabilitate or restore historic structures.

Program 3.1.I: Publicize opportunities and incentives for historic preservation to owners of historic buildings.

Program 3.1.J: Continue to assist owners of historic homes in lower-income areas with low interest loans through Community Development Block Grants (CDBG), when available.

Program 3.1.K: Establish a Historic Preservation Commission.

Program 3.1.L: Adopt and maintain a landmarks ordinance.

Program 3.1.M: Inform title companies that properties in Benicia may be affected by historic preservation regulations.

7. HISTORIC AND ARCHAEOLOGICAL RESOURCES GOALS, POLICIES, AND PROGRAMS

Goals, policies, and programs in this section deal with protecting archaeological resources; preserving and restoring Benicia's historic assets; and ensuring that new development and additions are compatible with historic assets.



GOAL 3.2: Protect archaeological (including underwater) sites and resources.

POLICY 3.2.1: Ensure the protection and preservation of artifacts in known, and as yet unidentified, areas.

Program 3.2.A: Work with the California Archaeological Inventory to develop an inventory of existing and potential archaeological sites.

Program 3.2.B: Refer development proposals that may adversely affect archaeological sites to the California Archaeological Inventory.

Program 3.2.C: Develop City regulations regarding inspections, code enforcement, and regulation of pot hunters.

Program 3.2.D: Require that all sites with archaeological resources likely to be disturbed by a proposed project be analyzed by a qualified archaeologist and an appropriate program developed to mitigate any impacts from the project.

B. CULTURAL RESOURCES



Benicia is a city with history, character, and a good quality of life. This “cultural landscape” is evidenced by the original town plan, the historic buildings, the alleys, and the remnants of piers and shipyards. “Quality of life” is a reflection of how people work, play, travel, and live. Based on the January 1996 community survey, the consensus in Benicia is that the quality of life is worth preserving.

Benicia’s lifestyle is active and diversified around the

community’s many assets: First Street, the parks, an abundance of recreational activities, the Marina, the Library, and the Arsenal. Public and private organizations sponsor activities for every interest area. Many schools, churches, and the Senior Center offer their facilities to support community cultural activities.

Whether formal or informal, all community activities contribute to Benicia’s identity and quality of life. The contribution may be impossible to quantify, but it is necessary to keep in mind, not only for its short-term benefit to the local economy but ultimately, to the community’s long-term sustainability.

1. COMMUNITY CULTURAL FACILITIES AND ACTIVITIES

Benicia enjoys a variety of public and privately owned cultural facilities that are managed by the City and other organizations (see Figure 2-7 for a diagram of publicly owned facilities). The civic complex includes the City Hall, the Police Department, a youth center, a senior center, a post office, and a public library. Other City-owned facilities include two houses used by the Boy Scouts and Girl Scouts, the Clocktower, the Commandant’s House, and the Camel Barn complex in the Arsenal. Privately owned recreational and cultural facilities include the Southampton Swim Club and B.D.E.S. Meeting Hall.

Benicia is also home to several historic museums: the former State Capitol Building, the Camel Barn complex, and the Fire Museum.

2. CULTURAL GOALS, POLICIES AND PROGRAMS

This section sets goals for community recognition of the existence and value of Benicia's cultural resources and programs. Special attention is given to the Library, Camel Barn Museum, and community-wide special events.



GOAL 3.3: Increase public awareness of cultural resources and activities.

POLICY 3.3.1: Preserve and enhance cultural organizations, resources and activities.

Program 3.3.A: Utilize the City's web page and other information sources to advertise cultural activities.

Program 3.3.B: Continue City funding of cultural activities and the Camel Barn museum.

Program 3.3.C: Require periodic reports of the results of City funding.

Program 3.3.D: Investigate the creation of a City-appointed cultural commission.

Program 3.3.E: Develop promotional materials that increase community awareness of the Camel Barn museum.

Program 3.3.F: Expand the museum to include other historic buildings.



GOAL 3.4 Support the library and the services it provides to the community.

POLICY 3.4.1: Maintain and expand library services.

Program 3.4.A: Keep the library up-to-date with electronic and other technological developments.

Program 3.4.B: Plan for expanding library services into existing unfinished basement space as needs dictate.

POLICY 3.4.2: New development will be required to underwrite additional library materials.

Program 3.4.C: Maintain an adequate "book fee." (See Glossary for definition.)



GOAL 3.5: Promote events with wide community attraction.

POLICY 3.5.1: Support community-wide and special events, such as arts in the park, a farmers' market, and open studios.

POLICY 3.5.2: Plan special events while keeping in mind the need to minimize noise and traffic congestion.

3. THE ART COMMUNITY



Benicia's vibrant arts community is one of its prominent assets. The availability of large open spaces in the Arsenal buildings draws accomplished artists and arts-related businesses to the Lower Arsenal.

The history of Benicia's art community dates back to the post Korean War era. Artists exhibited and sold works from the Railroad Depot Gallery and the Tipton Tea Room on First Street.

Since then many diversified activities and events have become an established part of the art community. Among the most notable are:

- the Benicia Old Town Theater Group, which began providing high-quality theatrical productions in 1964;
- establishment of several renowned glass studios;
- establishment of Benicia Community Arts in 1980, which serves as an umbrella arts organization; and
- the Camel Barn Museum, established in 1982.

In 1984, a Mayor's Committee on Culture was appointed to assess Benicia's cultural heritage and resources, evaluate existing programs, and make recommendations for the future of arts and culture in the community. Recommendations included establishing a cultural commission and a center for library and cultural activities; creating a funding structure for cultural pursuits; and inclusion of an arts and culture section in the General Plan.

A direct result of the Mayor's Committee on Culture was the establishment of Arts Benicia in 1988. This organization administers arts-related issues for Benicia, and to coordinate, fund, and publicize arts for public benefit. The group was instrumental in the adoption of the Live/Work Ordinance, which changed zoning to allow artists to live and work in their Arsenal studios.

In 1993, Arts Benicia opened a gallery in converted warehouse space in the Arsenal. The gallery is a nucleus for the evolving Arsenal community.

Of the 1984 Mayor's Committee recommendations, the library and an art gallery have been built and the Art in Public Places Program has been initiated. However, the issues of establishing a cultural commission and a funding structure have yet to be addressed.

4. ART GOALS, POLICIES, AND PROGRAMS

This section sets goals for recognition of the existence and value of Benicia's art community. It calls for supporting and promoting the arts, and installing art in public places.



GOAL 3.6: **Support and promote the arts as a major element in Benicia's community identity.**

POLICY 3.6.1: Attract and retain art-related businesses.

POLICY 3.6.2: Continue to allow and encourage live/work spaces for artists.

Program 3.6.A: Evaluate where live/work spaces are allowed and what restrictions are placed on them.

Program 3.6.B: Encourage expansion of art retailing on First Street.

POLICY 3.6.3: Enhance public places with art.

Program 3.6.C: Work with developers and builders to incorporate public art into projects, where applicable.



C. VISUAL CHARACTER

1. WHAT IS VISUAL CHARACTER?

This section is concerned with the location, mass, and arrangement of the various components of development. Visual character combines elements of city planning, architecture, and landscape architecture, and attempts to give form, in terms of both beauty and function, to selected urban areas or to whole cities.

This section focuses on how Benicia looks and feels. It attempts to translate an intangible sense of place into tangible policies and programs that will keep Benicia a fine place to live, to work, and to raise a family.



2. THE LOOK AND FEEL OF BENICIA

NATURAL FEATURES

Benicia is a place of immense natural variety and beauty. The city is connected by salt water to the Golden Gate and the Pacific Ocean. Marshes along the Carquinez Strait cradle a rich variety of life. Rolling hills rise dramatically from the water's edge. The hills and the water inevitably become a component of the human landscape both visually and ecologically. They provide the natural qualities that contemporary development seeks.

THE HUMAN LANDSCAPE

The form that settlement in Benicia took over its 150 years is no less dramatic. The grid pattern of streets in the south portion of town reflects a mercantile orientation.

The rectangular blocks and lots were simple to lay out and easily accommodated a variety of uses. The scale reflected a time when commerce was conducted in smaller increments and manufacturing was primarily by hand. The mix of uses reflected the practical needs of daily life and the three miles per hour one could manage on foot. By contrast, the curvilinear and auto-oriented street patterns of Southampton would not have been possible without contemporary engineering capabilities.

Streets, plazas, squares, and formal open spaces such as City Park are the living rooms of the community. They are the places where random personal contacts can reinforce social, political, and commercial relationships.

The City's industrial park is largely separated from most of residential Benicia by intervening hills. Large expanses of paved areas surround buildings of a size and form vastly different from the residential districts. From an urban design perspective, what is most important about this industrial area is that it is relatively homogenous and completely separate from the rest of the community.

The Exxon Refinery is an exception. Because it is built among the hills, as opposed to most of the industrial area, individual structures are visible as one moves along the surrounding roads and from some residential areas and the Downtown. The color of the pipelines reinforces their connection to the refinery even as they move out beyond the complex and across the landscape.

3. SCENIC VIEWS, STREETS, AND GATEWAYS

SCENIC VIEWS

Benicia is rich with views and vistas; views of the water, of the hills, and of the community from within and from external locations define Benicia's community character. Figure 3-2 identifies the more important views and vistas.

In addition, there are a number of framed streetscape views, such as along First Street, that warrant preservation or enhancement. Such streetscape views are more urban, intimate, and enclosing as opposed to grand, sweeping views of the hills, water, and city.

WATERFRONT

The Carquinez Strait and Benicia's waterfront form the entire southern boundary of the City. The shoreline is a unifying visual element, continuous from bridge to bridge, that can be enjoyed from the many hillside and hilltop vantage points in town. The waterfront provides Benicia with a sense of identity and place, and it recalls the town's history as an early and important riverfront community. The views across the Strait to the undeveloped hills of Contra Costa County offer an invaluable reminder of what California once looked like. Benicia's waterfront is a natural and historic resource, and is an essential element of the community's identity.

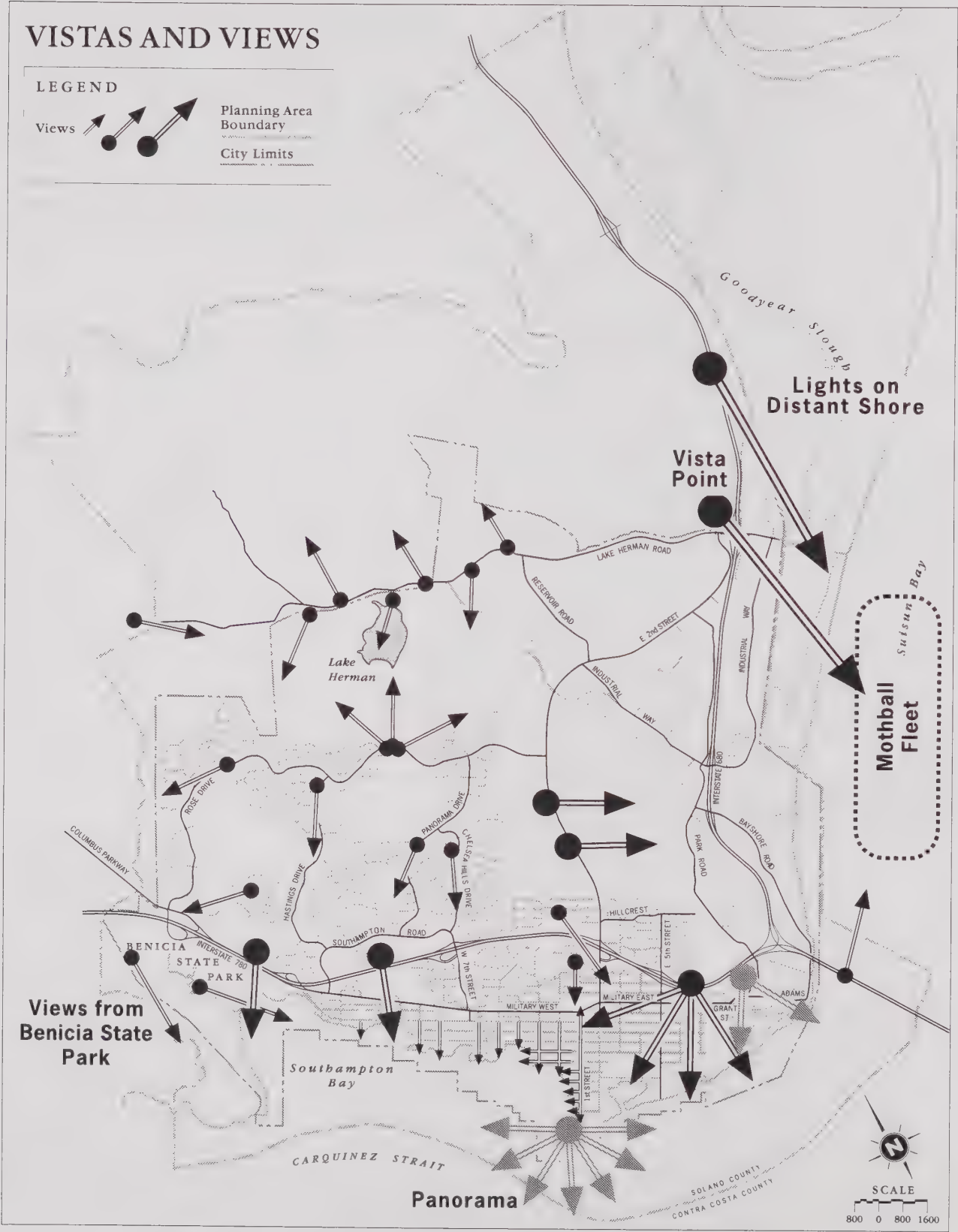


Figure 3-2. Vistas and Views

SCENIC STREETS AND GATEWAYS

A variety of scenic resources can be viewed from three principal routes:

- I-780 between Glen Cove Road and the Benicia-Martinez Bridge;
- I-680 between Morrow Lane and the Benicia-Martinez Bridge; and
- Lake Herman Road.

Along these scenic routes are four natural gateways to the community. (A diagram of the gateways can be found on Figure 1-3.) The topography and road configuration leading to each gateway tend to block views into the community. After passing through the gateways, various parts of the community are revealed. Undeveloped hillsides and landscaped slopes leading up to the gateways add a rural feeling and help separate Benicia from neighboring communities. The features of each of the scenic roads and their gateways are discussed below.

Interstate Freeway 780 between Glen Cove Road and Pine Lake

Gateway. There is a southern gateway to Benicia where I-780 climbs from the I-680 intersection and crests in the vicinity of the basin of former Pine Lake. A magnificent view over the hilltops of Benicia to the distant Carquinez Bridge opens up as one moves west through this gateway.

The western gateway to Benicia on I-780 is formed by open, low hillsides, freeway landscaping, and the Southampton Marsh in the vicinity of the Columbus Parkway interchange. Views into the community open up as one moves east, past the Boundary Hills.

Outward Views. The experience of moving along I-780, where views alternate between broad vistas and close containment, is particularly exciting. Benicia's residential character is established by views along this route; and views to and across the Carquinez Strait to the steep, wooded slopes of northern Contra Costa County impart a rural image.

Visual Corridor. The experience of traveling from west to east along I-780 reveals the importance of the Boundary Hills which extend from Dillim Point on the Carquinez Strait to north of Lake Herman Road (refer to Figure 1-2.) The Boundary Hills, formed of a composite of close and distant hilltops and hillsides, visually separate Benicia from Vallejo. They first become apparent along I-780 at the Glen Cove interchange. The Boundary Hills also can be seen from various places along I-780 inside Benicia.

Between the former Pine Lake and East Second Street one can see vacant land and the edges of development. Between East Second Street and Southampton Road (West Seventh), views are generally contained by open, undeveloped hillsides. A notable wooded slope exists at the north side of the highway west of East Second Street. The overall impression of Benicia from the I-780 corridor is one of a relatively low density residential community.

Interstate Freeway 680 between Morrow Lane and the Benicia-Martinez Bridge

Open Space Gateway. The northern gateway to Benicia occurs on this route where the road passes under the Lake Herman Road overpass and around the point of land marking the interchange. The visual experience is enhanced by the open hillsides to the west which, as the gateway is passed, recede to reveal Benicia's major industrial area.

Outward Views. The views along this route establish an initial image of Benicia as a place where a high quality environment for manufacturing and import/export activities is provided. It becomes immediately clear that industrial activities are contained by natural topographic boundaries within the basin formed by the hills below Lake Herman Road on the north, the slopes above East Second Street to the west, the main ridgeline to the south, and Suisun Bay to the east. To the east, the "mothball fleet" can be seen in Suisun Bay.

Visual Corridor. When traveling from north to south, this route is marked by steep grassy slopes dotted with oaks and cattle on the west, and the expanse of Suisun Marsh on the east. Once the Benicia City Limits are reached, views briefly open up on both sides of the road; however, the focus is directly on several large storage tanks on the north side of the main ridge. When traveling from south to north, the focus is westward on the rolling hills above and below Lake Herman Road.

A viaduct carries the highway from its high point on the main ridge at the south to the lower grade below. Outward views are generally unobstructed along the viaduct. Between the industrial park interchange (north side of the viaduct) and Lake Herman Road, the visual corridor is contained on the east by the Union Pacific Railroad berm, and on the west by slopes between Park Road and the highway. Industrial Park landscaping has enhanced the corridor along part of this western edge.

Lake Herman Road

Open Space Gateway. The northwestern gateway to Benicia occurs on this route where the road passes through the Boundary Hills west of Lake Herman. Steep, high ridges rise at both sides along the road, near the 300 foot elevation, suddenly revealing a breathtaking view down and across Lake Herman to the Carquinez Strait beyond. An active quarry is located on the south facing slope of the hill along the north side of the road.

Visual Corridor. The Lake Herman Road corridor conveys a rural image for Benicia which is unusual so close to an urban area. The visual experience between the natural portals of the Boundary Hills and Lake Herman is enhanced by unique rocky ridges projecting upward from the grassy slopes south of the road and by riparian vegetation along the creek feeding into Lake Herman. Open hillsides within the City-owned property surrounding Lake Herman form a pleasant backdrop to the lake on the south. Lower, open slopes of the rolling hills north of Lake Herman Road complete the visual experience.

PLANNING IN SCENIC CORRIDORS

Preservation

“Preservation” means maintaining identified sight lines and minimizing visible development on any land that would block public views. Key visual features visible from the identified scenic highways are listed below.

- Carquinez Strait
- Suisun Marsh
- Boundary Hills
- Lower open slopes (along I-780)
- Former Pine Lake basin
- Reservoir Hill
- Arsenal Cemetery
- Significant rocky ridges
- Significant clusters of riparian trees
- Lake Herman
- Rolling hills (adjacent to I-680 north of Lake Herman Road)

4. ARCHITECTURAL AND LANDSCAPE FEATURES

Buildings shape public spaces, and the details of their street faces have much to do with the success and viability of the streets and spaces they border.

In the last 30-40 years, while attention has been given to the visual character of buildings, emphasis has been on convenience for the automobile. An example is the preponderance of garage doors in the newer residential areas.

SOUTHAMPTON

Southampton displays a typical late 20th century streetscape with curvilinear street patterns. Vehicles are parked at curbside much less frequently than occurs Downtown because of the lower density and greater number of available garage spaces and driveways. The building fronts are dominated by garage doors and large lawns.

INDUSTRIAL AREAS

The older industrial areas developed in response to wartime activities. They are characterized by large scale, horizontal, boxy buildings, and roads built for temporary use. The pavement in some areas is random and chaotic, with little consideration for pedestrian safety or comfort. In addition, landscaping and screening of unattractive uses is inadequate, and overhead utilities are unattractive.

DOWNTOWN

Landscape Features

The block of West J Street between First and West Second Street has a splendid stand of vintage palm trees, which were often planted to give importance to major streets in 19th century California towns. This planting continues across First Street and along the East J Street frontage of St. Paul's Church grounds. Palm trees also distinguish the front yards of older residences such as the Riddell-Fish house. Other specimen, or non-native trees occur in older landscaped settings such as the grounds of the former State Capitol and the Fischer-Hanlon house next door.

Architectural Features

Downtown Benicia has three broad categories of buildings: commercial, institutional (including civic and religious structures), and residential. The commercial buildings are clustered along First Street for the most part. Older institutional buildings are found generally on or within a block of First Street, while 20th century examples are more widely dispersed. Residential buildings are represented principally on the east-west streets, although some are located on First Street as well.

The old portion of Benicia is characteristic of 19th century and early 20th century American neighborhoods. The area is dominated by east/west streets that typically have vertical curbs, parallel on-street parking, and parkway planter strips with trees between the sidewalk and curb.

Building fronts are dominated by porches and a vertical massing of windows. Uses are mixed, with some streets having office, retail, and housing on the same block.

Commercial buildings in the 19th and early 20th centuries were often built with offices on the upper floors and additional space for storage. Another common commercial type was more residential in character and had apartments on the upper floor or floors. The strictly commercial buildings typically had a block-like form with raised parapets that concealed the actual roof, which was often pitched. The mixed residential and commercial buildings often revealed pitched or gable roofs. On First Street many residences were converted to commercial use but retained the outward characteristics of a residential building. Although ground floors were often remodeled, one typical 19th and early 20th century shopfront design that can still be found on First Street has recessed entrance doors flanked by polygonal show windows, so that much of the shopfront is glazed.

Institutional, civic, and religious buildings, because of their public nature, were generally larger and more monumental than residential buildings, but frequently similar in character and form. Whether used for government offices, museums, or organizations of a quasi-civic nature such as the I.D.E.S. or the I.O.O.F., they were built in the dominant styles of their period. Although churches, their associated parochial buildings, and their educational institutions also followed stylistic trends to a certain degree, their designs tended to fall within the general styles of Classical or Gothic Revival in the 19th and early 20th centuries.

Residential buildings Downtown exhibit the range of styles mentioned above as well as typical forms or plans. One house type that occurs very frequently Downtown is the pyramidal roofed, single-story cottage with a rectangular or square plan. This basic form was used for several styles including Classic Revival, Italianate, and Stick/Eastlake. Decorative detail, when present, was mainly confined to porches. Some of the cottages which now appear totally devoid of detail may always have been so.

ARSENAL DISTRICT

Landscape Features

The open space, landscape features, and urban design elements recognized as contributing to the Arsenal District include the former Barracks Parade Ground, the Military Cemetery, the rolling hills that form the setting for the Storehouses (Camel Barns), Ammunition Shops, and Magazines on the northern part of the district; and notable trees of great age or size such as the eucalyptus trees near the site of the former Benicia Barracks north of the old Post Hospital building. The specimen trees and ornamental landscaping surrounding the officers' quarters on the ridgetop have special significance, along with the mature street trees which line Jefferson Street and the ornamental specimen trees which mark the Military Cemetery. Additionally, the embankment above Adams and Washington Streets was historically planted with cork oak trees to form the original passage that provided a formal entrance to the Clocktower.

Architectural Features

The Arsenal District has a more limited range of historical building types and architectural styles than does the Downtown, largely because the buildings were constructed by the federal government on a military reservation. However, this controlled situation did not mean that the buildings were not well designed or constructed. In fact, the Arsenal has some of the state's most architecturally distinguished buildings, notably the Storehouse and Ammunition Shop (Camel Barns), Clocktower, Powder Magazine, Shops, and the Officers' Residences.

The two broad categories of historic buildings in the Arsenal Historic District are the military/industrial buildings that comprise most of the district's historic structures and the residential buildings where military personnel were formerly quartered. The latter are concentrated in the middle zone of the district between the Jefferson Street embankment and the freeway. The military/industrial buildings are more scattered, but are principally in the areas south of Adams Street and north of the freeway.

VISUAL CHARACTER GOALS, POLICIES, AND PROGRAMS

This section provides goals, policies, and programs that will maintain and reinforce Benicia's small-town character. In doing so, the goals, policies, and programs focus on preserving natural features and vistas, designating and maintaining scenic roads and highways, identifying and enhancing the gateways to the city, and improving the streetscape.

While this section focuses solely on visual character and community design, there are other sections in the General Plan where related goals, policies and programs appear. The most significant are listed below.

Growth Management	Goal 2.1 Policy 2.1.1 Program 2.1.A
Economic Development	Program 2.6.F Policy 2.11.3 Program 2.12.H Program 2.12.J Program 2.12.K Program 2.12.O
Circulation	Goal 2.14 Policy 2.20.3
Historic Resources	Goal 3.1 Policy 3.1.5



GOAL 3.7: Maintain and reinforce Benicia’s small-town visual characteristics.

- POLICY 3.7.1:** Ensure that new development is compatible with the surrounding architectural and neighborhood character.
- POLICY 3.7.2:** Encourage “place-making”—the arrangement of built elements to create indoor or outdoor spaces that are recognizable and suitable for a specific function or functions.

“Place making” and “place definition” are among the most important functions of urban design. “Place” can be manifested in many forms: a street closed off for a neighborhood or regional fair; a cafe on the sidewalk or in a courtyard adjacent to it; a front porch where neighbors gather; or a small intimate patio or porch on the private side of the building where one can take a respite from urban life.

- Program 3.7.A:* Develop design guidelines for public works and private development that encourage place-making.
- Program 3.7.B:* Prepare a citywide urban design plan that addresses landscaping, street trees, landmarks, gateway definitions, vista preservation/enhancement, and protection of shoreline and hillsides.
- Program 3.7.C:* Develop citywide requirements for screening service entrances and equipment.
- Program 3.7.D:* Develop a schedule and financing plan for undergrounding power and telephone lines.



POLICY 3.7.3: Encourage consistent street tree planting, other types of landscaping, and neighborhood gardens.

Program 3.7.E: Advertise the existence of guidelines for tree preservation, planting, and removal guidelines.

POLICY 3.7.4: Where feasible, install and maintain landscape (planter) strips that separate sidewalks from the streets.

Program 3.7.F: Establish an adequate minimum width for landscape strips so that plant materials (especially trees) do not damage the sidewalk, curb, or gutter.

Program 3.7.G: Modify the City's street improvement standards to accommodate landscape strips.

POLICY 3.7.5: Preserve the grid pattern of Benicia streets.

Program 3.7.H: Require that land use and circulation plans for property along arterials minimize the need for sound walls.



GOAL 3.8: **Preserve First Street as the community focal point of Benicia.**

POLICY 3.8.1: Design new and renovated buildings along First Street to accommodate ground level retail commercial.

Program 3.8.A: Develop urban design improvements to unify Solano Square with City Park and the Civic Center.

POLICY 3.8.2: In the transition areas east and west of First Street, encourage the adaptive re-use, rather than replacement, of existing residential structures.



GOAL 3.9: **Protect and enhance scenic roads and highways.**

POLICY 3.9.1: Preserve vistas along I-780 and I-680.

Program 3.9.A: Inventory scenic resources along I-780 and I-680.

Program 3.9.B: Investigate and apply for State Scenic highway designation of Interstate Highways I-780 and I-680.

Program 3.9.C: Develop a sign enforcement program along the freeways.

The State scenic highway law calls for careful coordination in planning, design, construction, and regulation of land use and development on the band of land “generally adjacent” to the freeway. The benefits of the designation to the community are that the State will officially refer to the freeways as scenic highways in its publications; the freeways will be eligible for “special scenic conservation treatment” and will receive special signage; and the law will prevent the placement of Caltrans facilities in the right-of-way without City approval.

POLICY 3.9.2: Work with the State to complete and maintain landscaping of I-680 and I-780.

First priority should be planting the various unfinished cut banks facing I-680 and I-780. Planting that blocks views from I-780 to the Carquinez Strait should be avoided. Ground cover and shrubs are appropriate for purposes of erosion control and appearance.

Program 3.9.D: Preserve the trees on the northern edge of former Pine Lake.

POLICY 3.9.3: Orient individual building/business signage toward city streets, not toward I-780.

POLICY 3.9.4: Develop the City’s five identified gateways to provide a sense of entry and exit.

Program 3.9.E: Prepare land use and design guidelines to direct the nature and character of development at the city’s five gateways.

POLICY 3.9.5: Establish definable neighborhoods in future development and revitalization projects.



GOAL 3.10: **Enhance the streetscape along Military East and West.**



Program 3.10.A:

Develop a concept and streetscape plan for Military.

GOAL 3.11:

Enhance the East Side.

POLICY 3.11.1:

Focus public investment toward undergrounding utilities, completing sidewalks, adding walking paths, park amenities, landscaping, and street trees on the East Side.



GOAL 3.12:

Improve the appearance of the Industrial Park.

POLICY 3.12.1:

Encourage additional attractive, quality development in industrial areas.

Program 3.12.A:

Continue to implement and revise as necessary the Industrial Design Guidelines.

Program 3.12.B:

Adopt an ordinance establishing minimum standards for outdoor storage and yard maintenance within public view.



GOAL 3.13:

Improve urban design qualities of the waterfront and public access to the shoreline.

POLICY 3.13.1:

Enhance waterfront vistas.

Program 3.13.A:

Incorporate public visual areas in new development.

POLICY 3.13.2:

Improve pedestrian amenities along waterfront streets and walkways.

POLICY 3.13.3:

Take advantage of water orientation for recreation and industrial uses.

Program 3.13.B:

Develop a plan for public and pedestrian access to and along the waterfront and shoreline.

Program 3.13.C:

Complete the pathway system from Point Benicia along the entire shoreline to the intersection of West Second and G Street.

Program 3.13.D:

Use privately dedicated walkways to link to the waterfront.

D. OPEN SPACE AND CONSERVATION OF RESOURCES

State planning law requires cities to plan for “open space for the preservation of natural resources, the managed production of resources, outdoor recreation, and public health and safety.” The General Plan Land Use Diagram (found in the back pocket of this Plan) recognizes three categories of open space to meet these requirements:

1. **Marsh.** Includes identified shoreline wetlands (but excludes freshwater wetlands and riparian corridors).
2. **General.** Includes publicly-owned open space, land dedicated for permanent open space in residential subdivisions, open space for public health and safety (such as hillsides with slopes over 30 percent), open space for managed production of resources (such as mineral resources), and open space for conservation of natural resources (such as the Lake Herman watershed).
3. **Parks.** Includes publicly owned neighborhood, community, and regional parks, as well as public recreation facilities, and allows for more intensive recreational uses. They are discussed in the previous chapter under Parks and Recreation Chapter 2D: Community Services).



1. REGIONAL AND SUBREGIONAL OPEN SPACE AND TRAILS

OPEN SPACE

(A Parks and Open Space diagram is provided in Chapter 2D under Parks and Recreation.)

Tri-City and County Open Space

Benicia is part of the Tri-City and County Cooperative Planning Area that encompasses 10,000 acres of open space in unincorporated Solano County between Benicia, Fairfield, and Vallejo. The *Tri-City and County Regional Park and Open Space Preservation Plan* (adopted 1993) is incorporated in the Benicia General Plan as a Special Area Plan. The Tri-City and County Plan reserves the Cooperative Planning Area for continuing agricultural and other open space uses and establishes a framework for regional park planning.

Southampton Open Space

The undeveloped open space areas within the Southampton subdivision offer physical separation between houses and visual relief from development. Portions of this open space have trails that are used for hiking, jogging, and walking.

Some parts of the Southampton Open Space are “residual” open space areas that were too steep for development or recreational use. Though many of these open space areas are not connected, there is habitat value to resident wildlife. Corridors could be established to permit wildlife access, and efforts could be made to restore native flora.

Benicia-Vallejo Open Space Buffer

The hills and ridges at the western edge of the Planning Area, also known as the “boundary hills,” are designated open space to maintain a permanent visual and physical separation from Vallejo. The boundary hills begin at Dillon Point on Southampton Bay Natural Preserve and extend north, incorporating Lake Herman Road. This area is protected through a 1979 Benicia/Vallejo “Memorandum of Understanding to Preserve the Buffer Zone.” The two cities agreed that the buffer zone should be inviolate, with no urban development.

Lake Herman Regional Park

Lake Herman Regional Park is an existing 577-acre lake and open space area located at the northernmost edge of the city. Allowed passive activities in the park include fishing, hiking, and picnicking. Boating is prohibited since the lake is a secondary water supply for the city. A trail system connects Lake Herman with nearby Benicia Community Park.

Northern Area

An area between Lake Herman and the Tri-City and County Open Space is currently designated as open space, but is largely privately held and has faced development pressure.

Benicia State Park

Benicia State Recreation Area extends from the shoreline of Southampton Bay along the Planning Area boundary to the west and to Interstate I-780 on the north. It includes the tidal flats of Southampton Bay, as well as some trails and recreation areas.

Marsh and Shoreline

Benicia has important marsh and shoreline open space resources all along Carquinez Strait and Suisun Bay. These resources include Southampton Bay Natural Preserve (formerly Southampton Marsh) in Benicia State Recreation Area, small parks and shoreline access points along the residentially developed areas west of Downtown, the Downtown waterfront and Marina, and marsh areas along the Industrial Park. The biotic values of these areas are described later in this chapter under the Water Environment and Biotic Resources. These areas are also important for the recreation opportunities they provide.



REGIONAL AND SUBREGIONAL TRAILS AND PATHS

Benicia has a comprehensive system of bikeways and paved community trails. Bikeways are classified and identified in Chapter 2C: Circulation and a Bicycle and Multi-use Trails diagram is provided in the same chapter (Figure 2-4).

The Parks, Trails, and Open Space Master Plan (adopted in December 1997) proposes new trails to link the City's parks by foot, bicycle, horseback, and wheelchair. The Master Plan's proposed network of bikeways and trails is extensive and the Parks Master Plan serves as a guiding vision for General Plan bikeway and trail planning. (Refer to the Master Plan for a detailed description of city trails and paths.)

Interpretive Trails

Interpretive Trails are paved and located where there are ecological or historical resources of educational value. Signs provide information about significant features. An interpretive trail is proposed as part of Lake Herman Regional Park.

Bay and Ridge Trails

The San Francisco Bay Trail is a proposed 400-mile network that will circle San Francisco and San Pablo Bays, passing through all nine Bay Area counties. Benicia is one of the Bay Area cities along the pathway.

Benicia's Waterfront Trail is already signed as a part of the Bay Trail. It begins at the Benicia Marina and follows the commercial district on First Street, winds through the community and forks at Benicia State Recreation Area. The southern fork ends at Southampton Bay Natural Preserve where it connects with a trail to Glen Cove in Vallejo.

The proposed Bay Trail will enter Benicia from the south on the new Benicia-Martinez Bridge. As yet, there is no clear plan as to how bicyclists and pedestrians will connect to the Waterfront Trail from the bridge.

The Bay Area Ridge Trail is a second regional trail that will ultimately circle San Francisco and San Pablo Bays, following the hills and ridges that ring the Bay. In Benicia, this trail follows the same route as the Bay Trail along the Waterfront, and will require the same connection from the Benicia-Martinez Bridge.

Staging Areas

The Parks Master Plan proposes staging areas to link the City's parks and open spaces. "Staging areas" are gathering points adjacent to major trails and accessible to major roads. Major staging areas are to provide a full range of facilities for the trail user including on-site parking and rest rooms. Minor staging areas are to serve short local trails and are located in neighborhood parks.

2. REGIONAL AND SUBREGIONAL OPEN SPACE AND TRAILS GOALS, POLICIES, AND PROGRAMS

The following goals, policies, and programs have a broad reach. They are designed to protect and provide access to open space and the waterfront and provide buffers between urban communities.



GOAL 3.14: **Provide a buffer between Benicia and adjacent communities.**

POLICY 3.14.1: Continue to implement the provisions of the Tri-City and County Cooperative Plan for Agriculture and Open Space Preservation and the 1979 Benicia/Vallejo Memorandum of Understanding to Preserve the Buffer (often referred to as the Benicia-Vallejo Open Space Buffer).

The Tri-City and County Cooperative Plan for Agriculture and Open Space Preservation has been adopted by the City and is incorporated in this General Plan by reference.



GOAL 3.15:

Provide buffers throughout the community.

POLICY 3.15.1:

Preserve and protect, through a variety of methods, a pattern of open space buffers and greenbelts throughout the Planning Area.

Program 3.15.A:

Identify and evaluate open spaces (by function, location, size, connectivity, and views of open space).

Program 3.15.B:

Adopt an open space preservation program aimed at acquiring or assisting in acquiring rights to open space within the Planning Area.

Program 3.15.C:

Utilize existing land trusts.

POLICY 3.15.2:

Preserve public views of public open space and maintain existing vistas (including the Northern Area vistas) wherever possible.

Program 3.15.D:

Where applicable, require that new developments include view corridors that allow viewing open space from public roadways and public use areas.

POLICY 3.15.3:

Avoid creating difficult-to-use residual open space in new development areas.

Program 3.15.E:

Evaluate each proposed open space area to ensure it is large enough to meet its intended purpose.

POLICY 3.15.4:

Use open space as a buffer against natural or man-made hazards.

Program 3.15.F:

Require open space buffers around known hazardous areas, such as the Exxon Refinery and the IT site.

POLICY 3.15.5:

Encourage the landscaping of existing open spaces, and landscape new open spaces with native plants.

POLICY 3.15.6:

Restore and maintain natural landscapes in a natural manner.

Program 3.15.G:

Develop a landscape master plan for open space areas.



GOAL 3.16:

Preserve key land forms which separate Benicia physically and visually from adjacent communities.

POLICY 3.16.1:

Maintain visual and physical separation from Vallejo and Fairfield.

Program 3.16.A:

Use the westernmost parcels designated as open space to provide a buffer with Vallejo.



- POLICY 3.16.2:** Work with Vallejo to minimize visible development along the Boundary Hills.
- POLICY 3.16.3:** Allow no additional access roads between Columbus Parkway and Lake Herman Road.

GOAL 3.17: Link regional and local open spaces.

- POLICY 3.17.1:** Attempt to link existing regional and local open spaces using trails and open space corridors.

Program 3.17.A: Acquire open space corridors that link existing regional and local open spaces, where feasible.

“Acquire” may mean purchase, lease, or easement.

Program 3.17.B: Construct trails in open space corridors linking regional and local open spaces.



GOAL 3.18: Protect agricultural use.

- POLICY 3.18.1:** Preserve rangeland north of Lake Herman Road.

Program 3.18.A: Investigate land trusts and other mechanisms to ensure continuity of agricultural uses in the northern portion of the Planning Area.

3. BIOTIC RESOURCES

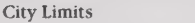
Biotic resources within the Benicia Planning Area include plant life, wildlife, special status species, and water bodies. Figure 3-3 shows the sensitive biological resources found in Benicia.

PLANT LIFE

Vegetation in the Planning Area is dominated by a cover of non-native grassland and suburban landscape, bordered by important marshlands at Southamptton and Suisun Bays. Most of the rolling hills south of the Rose Drive area are developed with urban and suburban uses, interspersed with grassland covered slopes and a few undeveloped ravines. These large expanses of open space could be restored with native grasses, oaks and other flora. The lands east of East Second Street and north of I-780 have been highly disturbed by past military and existing industrial uses. Grasslands cover most of the rangeland to the north of East Second Street and the Lake Herman Road area throughout the northeastern hills. Major creeks, drainages, and the fringe of Lake Herman in the undeveloped Northern Area support freshwater marsh and riparian vegetation, which varies from cattail to willow forest and scrub. Scattered oaks occur in the northeastern hills, primarily on the north and east-facing slopes west



Figure 3-3. Biological Resources

LEGEND	
	Planning Area Boundary
	City Limits
Sensitive Natural Communities/Unique Vegetation	
	Marshland/Northern Coastal Salt Marsh/Coastal Brackish Marsh
	Coast Live Oak Woodland
	Valley Needlegrass Grassland
	Riparian(Willow Riparian Forest/Willow Scrub)
	Golden Violet Population (Callipe Silverspot Host Plant)
	Eucalyptus Grove (Raptor Roosting & Nesting Substrate)
Wetlands/Other Waters	
	Palustrine/Riverine (Streams, Channels, Ponds, Lakes)
	Estuarine (Tidal Marshland, Mudflats)
Special Status Species Occurrences	
	Callipe Silverspot Butterfly Sighting
	Golden Eagle Nest Location
	General Occurrence Records in Suitable Habitat – Generalized areas where the indicated species have been recorded as occurring
SM	Salt Marsh Harvest Mouse
SS	Suisun Shrew
SSS	Suisun Song Sparrow
CCR	California Clapper Rail
CBR	California Black Rail
SMA	Suisun Marsh Aster
SBB	Soft Bird's-Beak
DTP	Delta Tule Pea
CT	Congdon's Tar Plant (Note: There is a strong likelihood that this area has been mapped by the CNDDB in an inaccurate location.)

Legend to Figure 3-3 on previous page

of I-680. Small areas of northern coastal scrub, freshwater seeps, remnant native grasslands, and stands of eucalyptus also occur in the northern portion of the Planning Area.

The various vegetative communities in the Planning Area are summarized below. With the exception of the description of developed areas and eucalyptus stands, each of the descriptions conforms with the classification system developed by the California Department of Fish and Game (CDFG) (1986).

Non-native Grassland

Non-native grasslands occupy most of the Planning Area: introduced grasses and broadleaf weeds (*e.g.*, fennel, artichoke, and star thistle) which quickly recolonize disturbed areas. Intensive grazing, dry land farming, and other disturbance have eliminated most of the historic range lands in the Planning Area.

Developed Areas

Ornamental landscaping has been planted throughout developed areas and around rural residences in the northern portion of the Planning Area. Weedy grassland occupies vacant lots and heavily disturbed areas, including much of the industrial area. Most species used in landscaping are non-native ornamentals—a wide variety of trees, shrubs, groundcover, and turf. Blue Gum Eucalyptus has been planted as windbreaks and forms woodlands in several locations.

Northern Coastal Salt Marsh and Coastal Brackish Marsh

Marshland natural communities occur along the Carquinez Strait and Suisun Bay where soils are subject to regular inundation by salt and brackish water. Species are segregated by elevation and degree of inundation. Populations of several special-status plants occur in the marshlands. This vegetation is generally absent along the developed shoreline of Carquinez Strait from the State Recreation Area at Southampton Bay

Natural Preserve to just east of the Benicia Bridge, although emergent marshland vegetation occurs near the entrance to the Benicia marina and forms a small stand just east of Tyler Street.

The Southamptton Bay Natural Preserve, on the southwestern border of the city, and the Suisun Marsh northeast of the city are protected from encroachment by development. The Suisun Marsh is the largest remaining wetland around the San Francisco Bay and the largest brackish area in the United States. It comprises more than 10 percent of California's total wetland area. Both of these marshes provide wintering habitat for waterfowl on the Pacific Flyway and are vital to fish and wildlife production.

In 1977, the California Legislature passed the Suisun Marsh Preservation Act to preserve and enhance the quality and diversity of marsh habitats, and to assure retention of upland areas adjacent to the Suisun Marsh in uses compatible with its protection. This legislation protects the Marsh by implementing policies and programs set forth in the Suisun Marsh Protection Plan prepared by the San Francisco Bay Conservation and Development Commission. Development in these shoreline areas is prohibited, with the exception of minor fill to protect the shoreline, improve its appearance, or provide public access and recreation. A portion of the Secondary Management Area (SMA) of the Suisun Marsh is within the General Plan Planning Area. The SMA is included in the Suisun Marsh Preservation Act, but has less stringent development restrictions.

In addition to salt water and brackish water marshes, freshwater marshes, typically dominated by narrow-leaf cattail, occur at drainages and the fringe of freshwater bodies, including portions of Lake Herman and several stock ponds. Freshwater marsh species also dominate at numerous freshwater seeps in the Planning Area.

Coastal Live Oak Woodland

Over 120 acres of oak woodland—dominated by coast live oak—occurs in the northeastern portion of the Planning Area. This includes an extensive stand along the upstream half of Paddy Creek and adjacent slopes, scattered stands along a north-south ridgeline in the Paddy Creek watershed, and large continuous stands on the east and northeast-facing slope along the I-680 corridor north of the Lake Herman Road interchange. The understory is generally poorly developed or composed of non-native grassland.

Willow Riparian Forest and Willow Scrub

Riparian vegetation occurs along stream courses and the eastern fringe of Lake Herman, with trees and shrubs forming stands of riparian forest and willow scrub. Well-developed riparian corridors, primarily willows, occur along Sulphur Springs and Paddy Creeks. Intensive grazing and trampling by cattle has eliminated understory species and severely limits regeneration of natural forest and scrub.

Valley Needlegrass Grassland

Remnant native grasslands are found in the Northern Area, forming valley needlegrass grassland communities which are interspersed with areas dominated by non-native species.

Northern Coastal Scrub

A few stands of this natural community are scattered in grassland areas. Most consist of thickets of coyote brush.

WILDLIFE

Although native vegetation within the Planning Area has been substantially altered, the marshlands and extensive tracts of undeveloped land contribute to a diverse assemblage of resident and migrant wildlife. Habitat types of particular importance to wildlife include the marshlands and open water Carquinez Strait and Suisun Bay, areas of well-developed riparian forest and scrub, and oak woodlands. In general, each habitat differs in its relative value to specific species, as summarized below.

Urbanized Habitat

In general, urbanized areas have low to poor wildlife habitat value. The diversity of urban wildlife depends on the extent and type of landscaping, remaining open space and proximity to natural habitat. Trees and shrubs used for landscaping provide nest sites and cover for wildlife adapted to developed areas. Urban areas provide habitat for several species of native mammals (squirrel, raccoon, and skunk). Urbanization now separates most of the shoreline habitat along the southern and southeastern edge of the city from the undeveloped rolling hills in the Northern Area.

Tidal and Marshland Habitat

Carquinez Strait and Suisun Bay are of regional importance to fish and wildlife, providing habitat for aquatic plants and animals, open water habitat for birds, and serving as the major movement corridor between San Pablo Bay and the Delta. Delta waters support game fish, such as largemouth bass, catfish, and sunfish, as well as non-game and forage fish.

The salt and brackish marshlands form the transition between open water and upland habitat. Special-status species known to be associated with marshland in the Planning Area include: salt marsh harvest mouse, Suisun shrew, California clapper rail, California black rail, Suisun song sparrow, and salt marsh yellowthroat. For many of these species, the upper limits of the marshland and the remaining adjacent upland habitat are essential retreats during extreme high tides. Protection of an adequate buffer to preserve sufficient retreat habitat is essential to maintaining the value of the marshlands. Much of this zone has been developed with industrial uses along the southern and eastern edge of Benicia. The importance of this buffer is recognized in the Suisun Marsh Protection Plan through establishment of a "secondary management area" for a portion of the Planning Area.

Grassland Habitat

Native and nonnative grasslands support a variety of mammals, birds, and reptiles, and provide foraging for raptors. Many species use the grassland for only part of their habitat, foraging in the grassland and seeking protection in the limited tree and scrub cover. Grassland habitat in the northern portion of the Planning Area supports the callippe silverspot butterfly, a special-status insect.

Freshwater Marsh and Riparian Habitat

Freshwater aquatic habitats and the associated riparian and marsh vegetation are of high value to wildlife, providing a source of drinking water, protective cover, and movement corridors. Riparian forest and scrub provides nesting and roosting for numerous resident birds, and stopovers for migrant songbirds. The streams, ponds, and Lake Herman provide aquatic habitat for amphibians. Dense riparian growth provides essential cover in the open grasslands for larger mammals, such as striped skunk, raccoon, opossum, and black-tailed deer.

Oak Woodland Habitat

These provide important cover for a greater diversity of wildlife than found in the adjacent grasslands. The abundant seed crops (acorns and madrone, poison oak, and toyon berries) are an important food source for black-tailed deer, woodpeckers, and other wildlife.

Rock Outcrops

Rock outcrops in the grassland and oak woodlands of the Northern Area provide a unique habitat for wildlife. Outcrops occur in the Paddy Creek watershed and the dense woodlands in the northeastern hills. The crest of Sulphur Springs Mountain forms an exposed bluff with cliffs and ledges just west of the Planning Area. These land forms provide perches for raptors and ledges for nests.

Eucalyptus Habitat

Although native to Australia, this naturalized species provides important nesting habitat for raptors and other birds, and cover for larger mammals. Eucalyptus in the open grasslands—where protective cover and perching habitat is scarce—emphasizes the importance of the dense tree stands to birds and larger mammals.

SPECIAL STATUS SPECIES AND SENSITIVE NATURAL COMMUNITIES

Special-status species¹ are plants and animals legally protected under State or federal Endangered Species Acts or other regulations, plus other species considered rare enough by the scientific community and trustee agencies to warrant special consider-

¹ Special-status species include: officially designated (rare, threatened, or endangered) and candidate species for listing by the CDFG; officially designated (threatened or endangered) and candidate species for listing by the US Fish and Wildlife Service (USFWS); species considered to be rare or endangered under the conditions of Section 15380 of the CEQA Guidelines; and other species considered sensitive or of special concern due to limited distribution or lack of adequate information.

ation. Species with legal protection under the Endangered Species Acts often represent major constraints to development, particularly when they are wide ranging or highly sensitive to habitat disturbance and where proposed development would result in a “take”² of these species.

The primary information source on the distribution of special-status species in California is the California Natural Diversity Data Base (CNDDB) inventory, which is maintained by the Natural Heritage Division of CDFG. A record search indicates several plant and animal species with special-status in the Planning Area, mostly in the tidal marshland habitat.

4. BIOTIC RESOURCES GOALS, POLICIES, AND PROGRAMS



GOAL 3.19: **Preserve and enhance habitat for special-status plants and animals.**

POLICY 3.19.1: Protect essential habitat of special-status plant and animal species.

Program 3.19.A: Require biological assessments in sensitive habitat areas as part of environmental review of proposed development.

Program 3.19.B: Require retention of essential habitat for special status species. If infeasible, require adequate mitigation for loss of special status species and/or habitat in compliance with State and federal regulations.



GOAL 3.20: **Protect and enhance native vegetation and habitats.**

POLICY 3.20.1: Protect native grasslands, oak woodlands, and riparian habitat.

POLICY 3.20.2: Restore native vegetation, such as birch grasses and oaks, wherever possible for open spaces of existing developed areas.

Program 3.20.A: Encourage community groups to carry out native plant restoration efforts.

Program 3.20.B: Limit the loss of native vegetation or require mitigation, or both.

Program 3.20.C: Require native and compatible non-native plant species, especially drought-resistant species, to the extent possible in landscaping new development and public areas.

² “Take” as defined by the Federal Endangered Species Act (FESA) means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect” a threatened or endangered species.

POLICY 3.20.3: Encourage preservation of existing trees. Especially preserve and protect mature, healthy trees whenever practicable, particularly where such trees are of significant size or are of significant aesthetic value to the immediate vicinity or to the community as a whole.

Program 3.20.D: Strive to incorporate existing mature, healthy trees into proposed developments.

POLICY 3.20.4: Require protection of movement corridors.

Program 3.20.E: Require preservation of open space corridors between Lake Herman, Sulphur Springs Mountain, the Northern Area, the northeast hills, the Benicia State Recreation Area, and the marshlands east of I-680.



GOAL 3.21: **Permanently protect and enhance wetlands so that there is no net loss of wetlands within the Benicia Planning Area.**

POLICY 3.21.1: Encourage avoidance and enhancement of sensitive wetlands as part of future development.

Program 3.21.A: Continue to require wetland delineation and mitigation as part of environmental review of proposed development.

POLICY 3.21.2: Require replacement for wetlands eliminated as a result of development at a higher wetlands value and acreage than the area eliminated.

Replacement ratios are initially determined by State and federal agencies. The City desires to take an aggressive approach in promoting wetland enhancement. If the City desires a higher ratio, a nexus must be established between the loss and the desired replacement ratio.

Program 3.21.B: Continue to coordinate with the California Department of Fish and Game, United States Fish and Wildlife Service, and the United States Army Corps of Engineers in reviewing proposed wetland modifications.

POLICY 3.21.3: Encourage development of a Suisun Marsh interpretive center near the I-680/Lake Herman Road interchange.

Program 3.21.C: Work with responsible agencies to develop the Suisun Marsh interpretive center near Lake Herman Road and I-680.

POLICY 3.21.4: Restore and increase marshland areas.

Program 3.21.D: Prepare a Local Protection Program (LPP) for the portion of the Suisun Marsh Secondary Management Area within the Benicia General Plan Planning Area.

Program 3.21.E: Identify small wetlands and require their protection, restoration, and enhancement as part of open space dedication in proposed development and in citywide open space improvements.



5. WATER RESOURCES

Carquinez Strait

Benicia has joined the cities of Vallejo, Martinez, and Hercules, the State Lands Commission, Solano and Contra Costa counties, the East Bay Regional Park District, and the Greater Vallejo Recreation District to protect and enhance the resources of the Carquinez Strait. Funding for this planning project was provided as part of a 1993 State Lands Commission agreement with the Crockett Cogeneration Project. The plan calls for the protection, restoration, and enhancement of resources, balanced with other public trust uses (recreation, public access, commerce, navigation, and shipping) which will contribute to the long-term economic vitality of the Strait.

Ravines and Streambeds

The ravine northeast of Columbus Parkway, the ravines oriented east from the “view hill” in Southamptton, and the streambeds associated with the former Paddy Lake and Lake Herman are important water resources and are protected from development by this Plan. By reducing overland runoff and filtering water-borne pollutants, these naturally occurring watercourses aid in flood prevention and water quality preservation.

Marshes

The Southamptton Bay Natural Preserve (formerly called Southamptton Marsh), on the southwestern border of the City, and the Suisun Marsh northeast of the City are protected from encroachment by development. The Suisun Marsh is the largest remaining wetland around the San Francisco Bay and the largest brackish area in the United States. It comprises more than 10 percent of California’s total wetland area.

Both of these marshes provide wintering habitat for waterfowl on the Pacific Flyway and are vital to fish and wildlife production. They are protected by this Plan.

In 1977, the California Legislature passed the Suisun Marsh Preservation Act to preserve and enhance the quality and diversity of marsh habitats, and to assure retention of upland areas adjacent to the Suisun Marsh in uses compatible with its protection. This legislation protects the Marsh by implementing policies and programs set forth in the Suisun Marsh Protection Plan prepared by the San Francisco Bay Conservation and Development Commission. Development in these shoreline areas is prohibited, with the exception of minor fill to protect the shoreline, improve its appearance, or provide public access and recreation. A portion of the Secondary Management Area (SMA) of the Suisun Marsh is within the General Plan Planning Area. The SMA is included in the Suisun Marsh Preservation Act, but has less stringent development restrictions.

6. WATER RESOURCES GOALS, POLICIES, AND PROGRAMS

(Goals, policies, programs for marshes are found in the prior section: Biotic Resources.)



GOAL 3.22: Preserve water bodies.

POLICY 3.22.1: Avoid development that will degrade existing lakes and streams.

Program 3.22.A: Require that all development in watersheds flowing into lakes and unchannelized streams include features to preserve run-off water quality.

Program 3.22.B: Require a minimum setback of 25 feet from the top of bank of streams and ravines. Do not allow development within the setback.



GOAL 3.23: Preserve Lake Herman as a municipal water resource.

POLICY 3.23.1: Ensure the biological, chemical, and physical integrity of Lake Herman.

Program 3.23.A: Continue to monitor water quality in Lake Herman and at upstream sources of potential pollution.

POLICY 3.23.2: Prohibit uses that would adversely affect water quality (such as motorized boats or swimming).



GOAL 3.24: Protect watersheds.

POLICY 3.24.1: Identify the Benicia watersheds to preserve.

7. MINERAL RESOURCES

Mineral resources consist of surface soils for agricultural uses or domestic gardens and subsurface materials such as mined rock or minerals. State planning law requires the general plan to identify mineral resources and provide for their continued availability. The one mineral resource area in the Planning Area which is required to be protected and preserved for extraction is shown on Figure 3-4.

SOILS

The Department of Agriculture's Soil Survey of Solano County identifies the predominant soil in the Planning Area as the Dibble and Altamont Series of expansive clay formations. These soils have the greatest limitations for the types of plants which can be grown without special soil treatment and are best suited to open rangeland or recreational purposes if left undeveloped. The amount of rainfall and low permeability of the soils contribute to the limited variety of natural vegetation supported. Past use of the unurbanized land in the Planning Area has been for grazing.

The Northern Area, particularly along Paddy Creek, is comprised of the richer, Rincon Series of clay loams which is capable of more intensive agriculture. These are alluvial soils formed from erosion of the sedimentary rocks of surrounding slopes. According to the Soil Survey, the predominant soil types are suitable for management of small birds such as quail and doves and for impounding water for waterfowl habitat or fish.

SUBSURFACE RESOURCES

The only regionally significant mineral resource in the Planning Area is a deposit of igneous rock from which aggregate is produced. The aggregate is used in the manufacture of asphaltic concrete, Portland cement concrete, rip-rap, drain rock and road base.

The Sulphur Springs Mountain Deposit was designated by the State of California as a Mineral Resource of Regional Significance pursuant to the Surface Mining and Reclamation Act (SMARA). An active quarry within the deposit exists along Lake Herman Road west of Lake Herman in the boundary hills between Benicia and Vallejo, outside of the Planning Area. Quarrying there has resulted in a cut face, which is visible from the Lake Herman area. To the extent possible given the requirements of the Surface Mining and Reclamation Act (SMARA), City policy discourages further expansion of the visible cut in an eastern direction.

Several abandoned mercury mines exist in the Sulphur Springs Mountain area. These mines have not been in production since the mid 1940s.

8. MINERAL RESOURCE GOALS, POLICIES, AND PROGRAMS



GOAL 3.25: **Conserve and, where appropriate, develop the mineral resources of regional significance within the Planning Area.**

POLICY 3.25.1: Maintain in open space the mineral resource area of regional significance designated on Sulphur Springs Mountain until a mineral resource extraction and reclamation plan that addresses all potentially significant impacts of extraction has been approved by the responsible agencies.



GOAL 3.26: **Minimize environmental impacts of mineral production.**

POLICY 3.26.1: Minimize exposure of the quarry face from residential areas.

POLICY 3.26.2: Allow extraction of mineral resources within the Planning Area but beyond the currently permitted quarry area on Sulphur Springs Mountain, only upon approval by the appropriate agencies.

POLICY 3.26.3: Maintain a variable ridgeline and natural landform representative of the scenic character of the Planning Area.

Program 3.26.A: Work with adjacent jurisdictions to establish mineral resource management measures.

POLICY 3.26.4: Prohibit extraction of mineral resources outside the State-designated mineral resource area, and permit extraction of mineral resources inside the State-designated mineral resource area only if applicable policies, mitigation measures, performance standards, rules, and regulations are met.

POLICY 3.26.5: Require mitigations, setbacks, buffers, and screening.

POLICY 3.26.6: Require that residential buildings to be constructed within 2,000 feet of the ultimate mineral extraction boundary be analyzed by a qualified engineer to ensure economically feasible measures that minimize the amplification of ground vibration.

9. ENERGY CONSERVATION GOALS, POLICIES, AND PROGRAMS

Developing and maintaining urban areas, including the open space within developed areas, utilizes energy in various forms. For development projects, there are “indirect” energy costs involved in the manufacture of building materials, and there are “direct”



Figure 3-4. Hydrology and Mineral Resources

costs involved in the ongoing operation (heating, lighting, *etc.*) of the project. The State has adopted comprehensive energy conservation standards (“Title 24”) which must be incorporated into all new development projects, including remodelings. Those standards are implemented in Benicia through the building permit review process. The State conducts periodic audits of local building departments to ensure that energy standards are being properly administered.



GOAL 3.27: Improve energy efficiency.

POLICY 3.27.1: Promote energy conservation in all new development and during rehabilitation of existing homes.

Program 3.27.A: Distribute information on weatherization and energy conservation.

Program 3.27.B: Implement State energy conservation requirements in new housing.

4. COMMUNITY HEALTH AND SAFETY

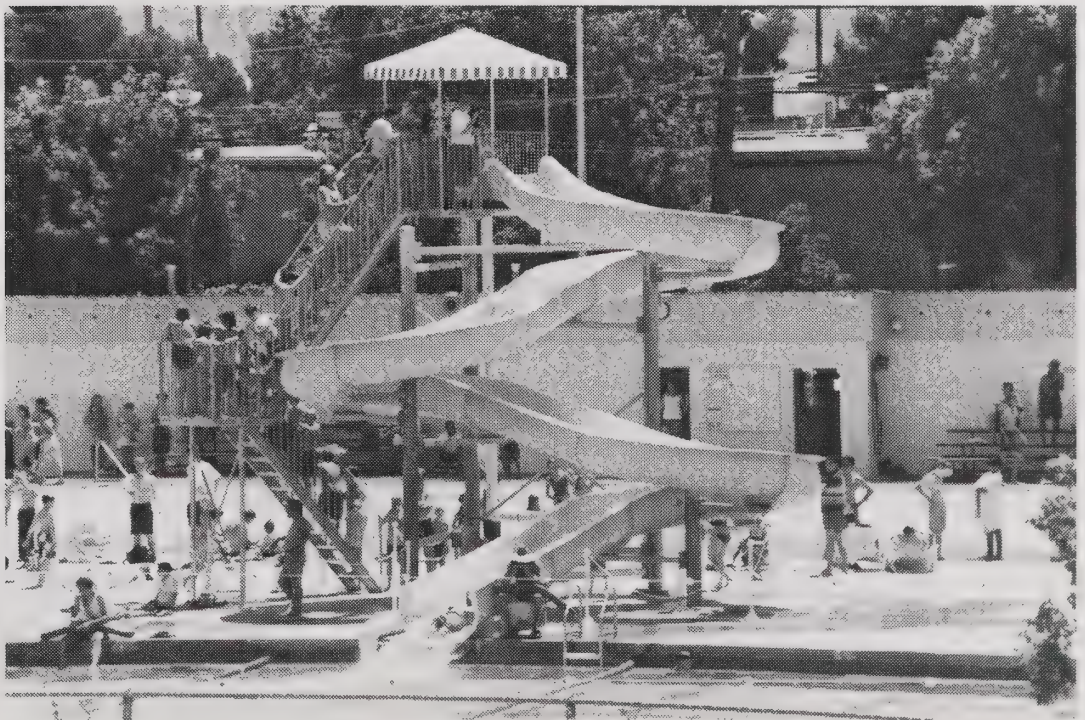
A. HEALTHY COMMUNITY

1. DIMENSIONS OF OPTIMAL HEALTH

A comprehensive definition of a healthy community is described by the following categories:

Physical Environment. This category focuses on a clean environment, fitness, nutrition, safety, and medical care. Specific issues include affordable and safe housing, parks and open space, streets, and sanitation.

Social Environment. Friends, families, and communities fall under this category. Specific issues include hunger, food bank utilization, school lunches, homelessness, substance abuse, cost of living, earned wages, percent of the population in poverty, and broader issues of social justice.



Emotional Health. Stress management and care during individual emotional crises affect the community's overall emotional health as do community balance (racial, economic, age), resource distribution, and participation in decision-making.

Intellectual Environment. Education, career development, and personal achievement fall under this category. Education issues include drop-out rates, graduation rates, continuing education programs, and other educational opportunities. Career development deals with issues such as unemployment rates, job types and availability, commute distance, and economic development.

Spiritual. This category deals with sense of purpose, love, hope, and charity.

The comprehensiveness of the above factors requires that broad segments of the community participate in addressing health issues and finding and implementing solutions to improve local health care.

2. HEALTHY COMMUNITY GOALS, POLICIES, AND PROGRAMS



GOAL 4.1: **Make community health and safety a high priority for Benicia.**

POLICY 4.1.1: Strive to protect and enhance the safety and health of Benicians when making planning and policy decisions.

POLICY 4.1.2: Promote a wide range of health-related services.

Such services will address the physical environment and social climate.

Program 4.1.A: Develop a citizen input planning process with the Human Services Fund Board to address locally identified community health and health-related concerns.

POLICY 4.1.3: All City departments should attempt to address the underlying causes of health, social, and safety issues.

Program 4.1.B: Promote measurable health goals and work with health-related agencies to monitor their implementation.

For example, work with "California Healthy Cities" on a project to reduce measurably the sale of cigarettes to children.

POLICY 4.1.4: Compile available information pertinent to the health and safety of Benicians.

Program 4.1.C: Require the Human Services Fund Board to report annually to the City Council and public on the health, well-being, and safety of the community, along with recommendations for improvements.

POLICY 4.1.5: Clarify City role in providing health services.

Program 4.1.D: Inventory health needs, identify holes in the network, and focus on those issues not being addressed.

Program 4.1.E: Delegate a formal group (e.g., Human Services Fund Board) to be responsible for community health promotion, and require the group to coordinate with a broad range of community representatives.

Program 4.1.F: Expand the role of the City staff person liaison to the Human Services Fund Board, as needed to support additional tasks assigned to the Board.



GOAL 4.2: **Improve access to medical, mental health, and social services for all Benicians, including the elderly and low-income.**

POLICY 4.2.1: Fully utilize and coordinate available resources and efforts through the City's Human Services Fund Board and other governmental and non-governmental agencies.

Program 4.2.A: Work with existing health care providers, neighboring cities, and the county, State and federal governments.

Program 4.2.B: Provide and maintain affordable transportation services to and from health facilities (in and out of town), especially for the elderly and disabled.



GOAL 4.3: **Attract additional health services to Benicia.**

POLICY 4.3.1: Promote preventive health care in line with the Child and Adult Preventive Care Guidelines published by the US Public Health Service (1994).

The guidelines recommend tests, examinations, immunizations, and other preventive measures for all ages.

Program 4.3.A: Support the development of a "Center for Human Services".

POLICY 4.3.2: Evaluate the need for and feasibility of new medical facilities in Benicia including a branch of the County Health and Social Services Department.

Program 4.3.B: Promote prenatal care, health care for children, teen activities, education and counseling, and intergenerational activities.

Program 4.3.C: Investigate the feasibility of utilizing existing City buildings to deliver health-related services, and expand the scope of the buildings' uses in conjunction with established neighborhood groups.

POLICY 4.3.3: Promote establishment of demonstration gardens at schools, churches, fire stations, and other sites.

Program 4.3.D: Consider utilizing vacant City property for gardening of fruits and vegetables.



GOAL 4.4: **Reduce the incidence of substance abuse and strive for a drug-free community.**

POLICY 4.4.1: Support the development of the education of all age groups in the prevention of substance abuse.

Program 4.4.A: Include law enforcement, the School District, and proprietors of nicotine, alcohol, and prescription drugs in planning and operating substance abuse prevention programs.

Program 4.4.B: Identify at-risk populations and work to develop programs and services to address their needs.

POLICY 4.4.2: Promote safe driving by youth.



GOAL 4.5: **Establish after-school programs and other constructive activities for youth.**

Program 4.5.A: Work with the School District on appropriate after-school youth activities.



GOAL 4.6: **Prevent and reduce crime in the community.**

POLICY 4.6.1: Encourage building designs that help to reduce crime.

Program 4.6.A: Review the design of new and rehabilitated buildings for ways to increase resident safety.

POLICY 4.6.2: Develop a corrective action plan to deal with high crime areas.

Program 4.6.B: Strengthen and expand neighborhood watch programs. Include businesses.

Program 4.6.C: Promote the education of citizens on how not to be a victim.

POLICY 4.6.3: Maintain an adequate officer-to population ratio in all areas, as approved by the City Council.

B. HAZARDS TO THE COMMUNITY

1. GEOLOGIC

Within Benicia, the most significant geologic hazards are those associated with land-slides, debris flows, and ground shaking during earthquakes. Other significant geologic hazards include the potential for settlement of structures constructed on filled bay land, expansive soils, cut and fill slopes, and flooding. These and other possible hazards are discussed below. A list of geological web site internet addresses is provided in Appendix H.

SEISMIC HAZARDS

Earthquakes

Benicia lies within a seismically active region. The principal faults in the area are capable of generating large earthquakes that could produce strong to violent ground shaking in Benicia.

In the event of an earthquake, seismic risk to a structure will depend on the characteristics of the earthquake, the distance to the earthquake epicenter, the subsurface conditions underlying the structure and its immediate vicinity, and the characteristics of the structure. It is impossible to predict precisely when, where, or exactly what kind and amount of movement will occur on local faults. However, the intensity of ground shaking can be amplified by local geologic conditions. Areas most susceptible to a significant amplification of ground shaking are underlain by soft sediments such as Bay Mud. In several areas along the Benicia waterfront, fill and buildings have been placed over Bay Mud. These areas are likely to experience substantially stronger ground shaking than areas underlain by bedrock. Figure 4-1 shows ground shaking amplification in the Planning Area.

Unreinforced Masonry Buildings

Most susceptible to earthquake damage are older structures (those constructed before 1950) and unreinforced masonry buildings (URMs). Structural damage occurs in older wood frame structures as a result of poorly designed foundations or a lack of structural bonding between the foundation and the building. The risk of structural damage can often be significantly reduced by securely attaching the structure to the foundation. Shear walls and other structural reinforcements are useful in improving resistance to earthquakes.

URMs—buildings constructed with brick, cinder block, or stone without steel reinforcement—were common in California in the early part of the 20th century. URMs are prone to collapse during large earthquakes, but can often be brought up to acceptable earthquake design standards by adding structural reinforcement.

The risk associated with URMs is addressed in Benicia's Seismic Hazards Identification Program (Chapter 15.60, Benicia Municipal Code). The program requires that the City

notify owners and tenants of URMs of the hazards. The notification by the City was completed in 1990.

Liquefaction

Liquefaction occurs in granular materials as a result of ground shaking, and is often followed by sudden local settling or slope failure. The potential for liquefaction is considered to be highest in areas underlain by saturated, unconsolidated, granular sediments. Within Benicia, the areas most at risk from liquefaction are along the Bay margin and in the flat-lying valley bottoms, in areas underlain by Bay Mud or Alluvium. Figure 4-2 shows areas with potential liquefaction hazard.

Although liquefaction often causes severe damage to structures, structural collapse is uncommon. The risk to public safety from liquefaction, therefore, is relatively low. Structures can be protected from liquefaction through the use of special foundations.

Earthquake-related Ground Failure

Various forms of ground failure occur during or immediately following an earthquake, as a result of ground shaking. The nature and severity of these effects are determined by the magnitude and duration of shaking and the local geologic and groundwater conditions. Earthquake-related ground failures include lateral spreading, lurch cracking, and landsliding.

Fault Rupture

The Green Valley fault is the only active fault known in the Planning Area. Fault rupture is likely to occur along the Green Valley fault as a result of an earthquake there. The risk of fault rupture elsewhere in the Planning Area is very low.

SLOPE STABILITY HAZARDS

Landslides

Landslides are significant geologic hazards in the Planning Area. Since the 1906 earthquake, damage from landslides has far exceeded that from earthquakes. Landslides are relatively rare in the developed portions of Benicia, but are numerous in the hilly, undeveloped areas. A map of the landslides in the Planning Area is shown on the Landslide Map, Plate 2 of the Public Safety Background Report, February 28, 1996. Another reference is the Department of Mines and Geology Open File Report 86-17 "Landslide Hazards in the Benicia Valley Area." Figure 4-2 shows areas with potential landslide hazard.

Landslides can cause extensive damage to buildings, roadways, or other facilities located on the landslide, and often result in large property losses. Because landslides are slow moving, people are rarely injured or killed. Landslides often result from poorly placed or poorly drained fill.

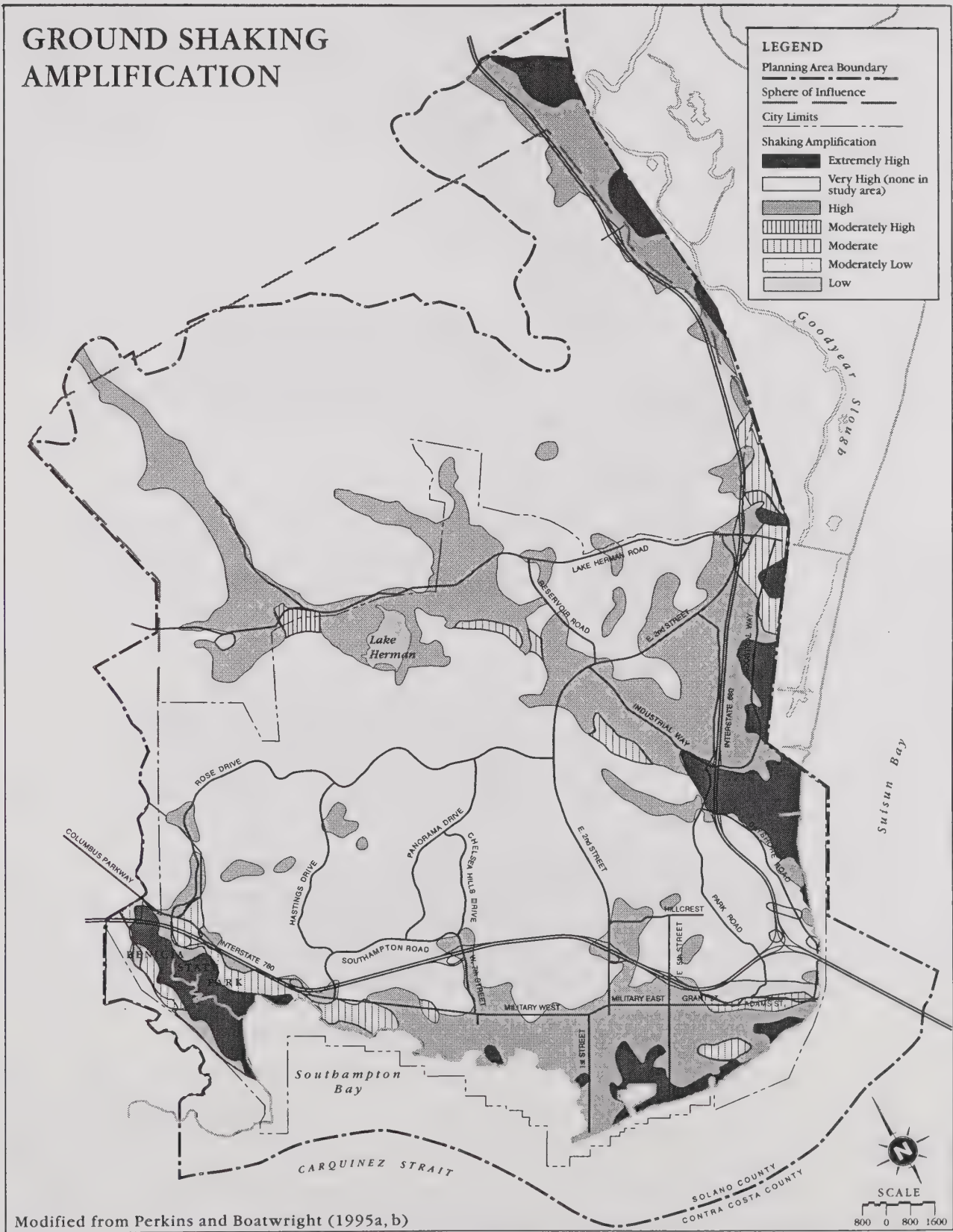


Figure 4-1. Ground Shaking Amplification

Debris Flows

Debris flows are fast moving, highly fluid landslides. Debris flows originate where hillside swales filled with unstable colluvium on steep slopes become saturated during a period of very heavy rainfall. Once the colluvium slides a short distance, the soil loses its structure, liquefies, and moves rapidly down the swale or ravine, coming to rest in the near-level valley bottom.

A large number of debris flows were mapped in the Planning Area, mostly in the hilly region northeast of Lake Herman Road.

The risk of loss of property or life as a result of debris flows can be reduced. The most effective strategy is to avoid placing structures or facilities in debris flow paths. Where structures exist within areas at risk of debris flows, measures can be taken to stabilize the debris flow source areas through retaining walls, regrading, or subdrainage, constructing basins to retain debris, or diverting debris away from structures.

2. FLOOD HAZARDS

Flooding that causes damage to lands and property within the Planning Area occurs primarily in response to severe rainstorms coincident with near-saturated soil conditions or high tides, or both. The most recent severe flooding occurred in February 1986 when the area received 7.66 inches of nearly continuous rainfall in nine days.

FEMA FLOOD MAPS

Based on the results of a revised hydrologic study commissioned by the City in 1987, The Federal Emergency Management Agency (FEMA), prepared a revised Flood Insurance Study and Flood Insurance Rate Map (FIRM) in 1989. Flood hazard zones delineated for Benicia and adjacent portions of Solano County within the Planning Area are shown in Figure 4-3.

The figure shows low-lying areas subject to flooding during a 100-year storm: (1) the lower reaches of the Sulphur Springs Creek Watershed downstream of Lake Herman; (2) the lands flanking the Benicia shoreline east of East 3rd Street; and (3) the wetlands associated with Benicia State Park on Southamptton Bay. A "100-year storm" means that in any year there is one chance out of 100 for a serious flood to occur.

STORMWATER MASTER PLAN/FLOOD CONTROL IMPROVEMENTS

Since adoption of the 1982 and 1989 Stormwater Master Plans, the City has completed over 40 storm drainage improvement projects (see Appendix A of the Public Safety Background Report, February 28, 1996). These improvements have significantly reduced the spot flooding which formerly occurred in Benicia. Two large stormwater detention basins were constructed as part of the Southamptton D-Unit subdivisions which have helped to minimize flooding problems Downtown.

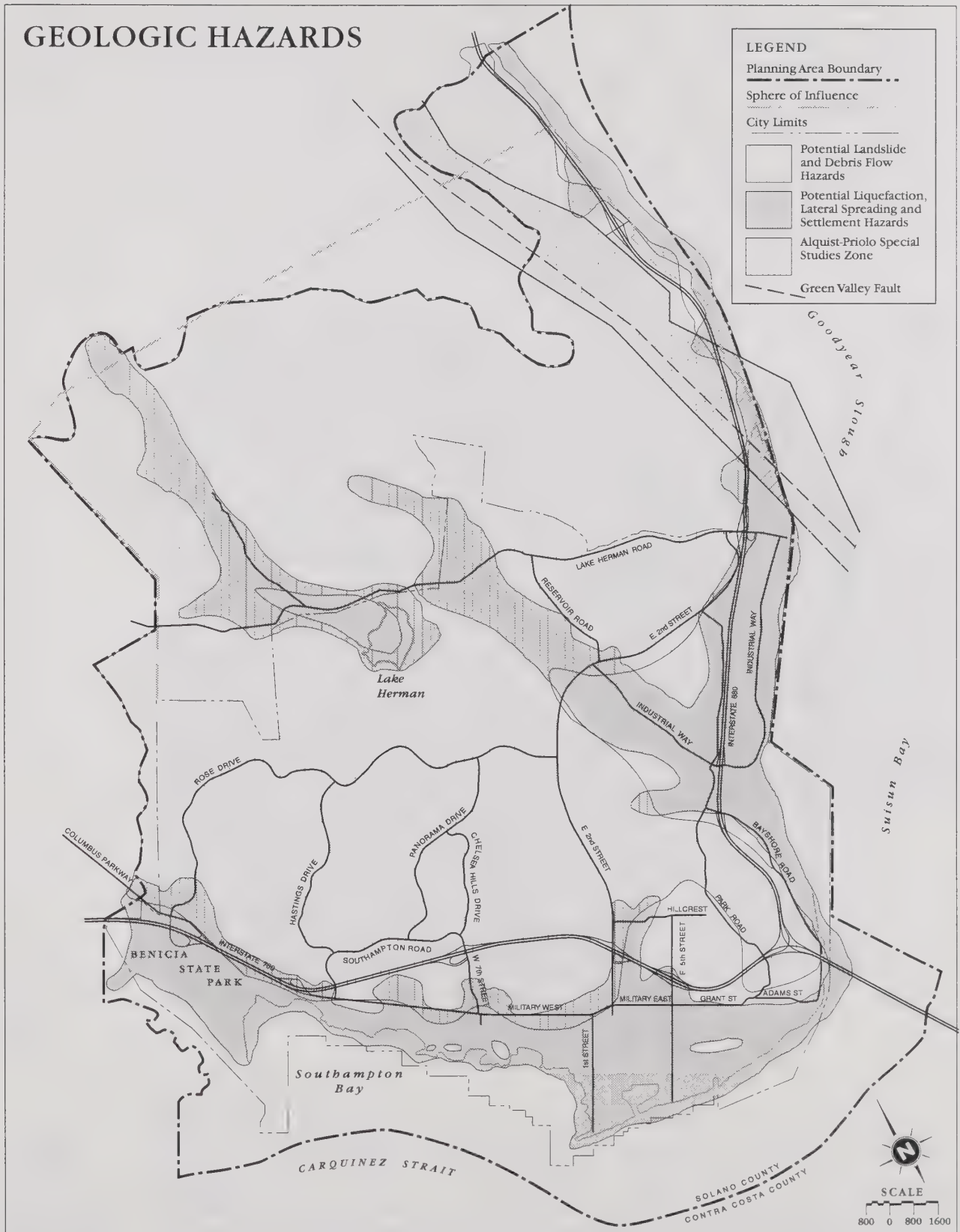


Figure 4-2. Areas with Potential Landslide and Liquefaction Hazards

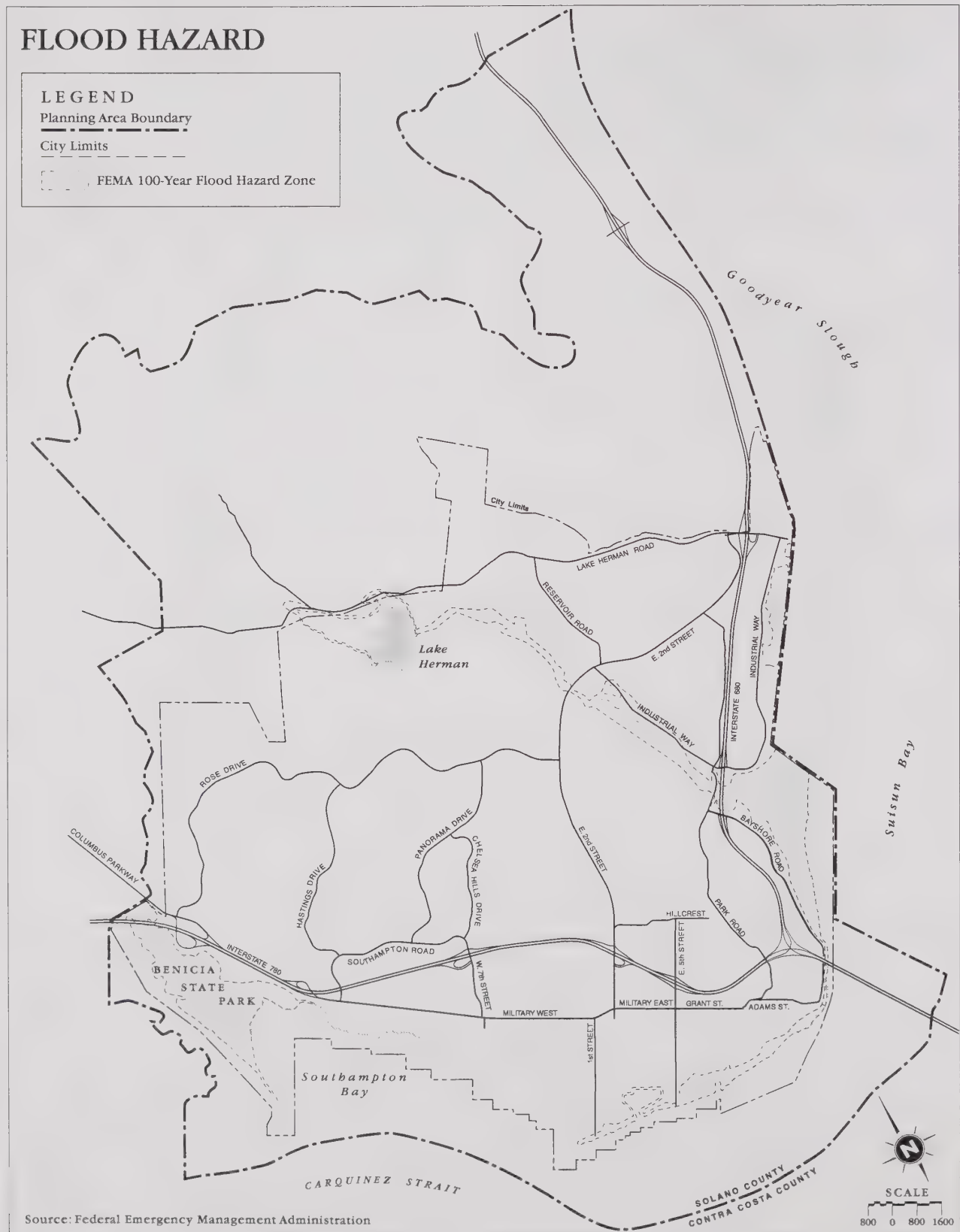


Figure 4-3. Flood Hazards

SEA LEVEL RISE

BCDC's 1988 study of sea level rise and its impacts on San Francisco Bay predicts a rate of sea level rise of between 0.005 and 0.05 feet per year over the coming tidal epoch. While rising sea level will not be enough to endanger existing developed areas of Benicia, it may mean that flooding could be exacerbated in low lying areas at high tide. The height of wave run-up and related shoreline erosion during storms may also increase. As a result, existing sea walls and levees may have to be raised, and the maintenance and design of shoreline stabilization works will also be affected.

3. FIRE HAZARDS

The City's jurisdiction includes extensive open space (primarily grassland). Residential and industrial uses occur in proximity to these open space areas, posing potential fire safety problems. Figure 4-4 shows that most of the Planning Area is a potential fire hazard. To address fire prevention in open space areas, the Fire Department administers a vegetation control program.



4. HAZARDOUS MATERIALS AND WASTE

Improper handling of hazardous substances can result in public health hazards through contamination of soils or groundwater or through airborne releases in vapors, fumes, or dust. Particularly susceptible populations that may be exposed, such as children, pregnant or lactating women, people with immune deficiencies, and seniors are called "sensitive receptors". The presence or proximity of hazardous substances could pose restrictions on the types of land use that would be appropriate for future development. Even if handled correctly and in accordance with applicable regulations, hazardous substances could present a potential health risk to the surrounding population if released during an accident or an emergency.

HAZARDOUS SITES

Regulatory agencies involved in sites that have been investigated may have decided—based on federal and State regulatory guidelines—to allow residual contamination to be left in place or to take other remedial actions. This is because hazardous waste that is below the ground at an undeveloped or existing residential or commercial site can pose a health threat if the contaminated soil is disturbed by construction, landscaping, or similar activities.

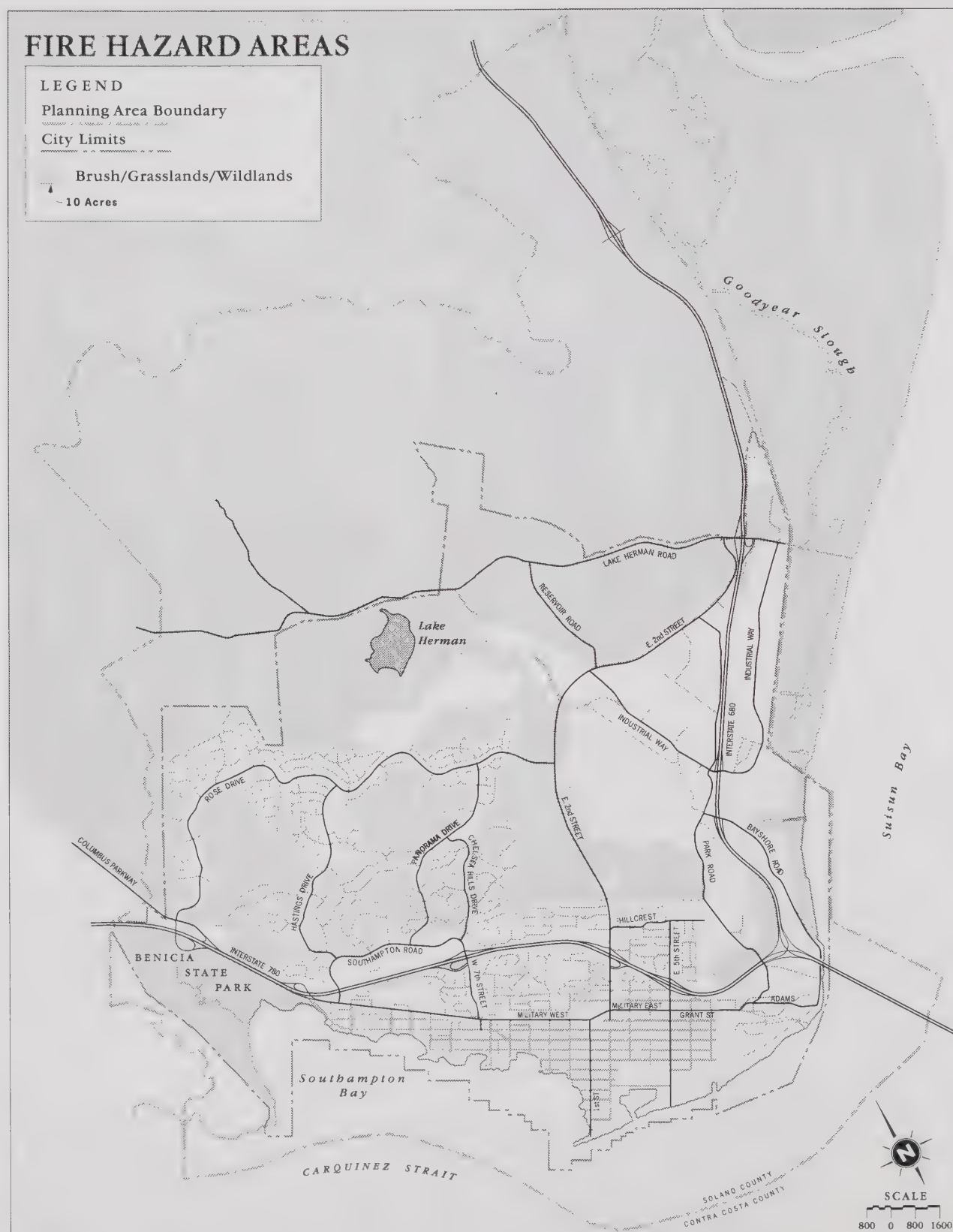


Figure 4-4. Fire Hazards

General locations of identified known or suspected hazardous substances and waste sites in Benicia are shown in Appendix G. There are 57 identified hazardous waste sites in the Planning Area. With four exceptions—the IT Panoche Hazardous Waste Disposal Facility (Site 1), the Braito Landfill (Site 2), the landfill at the Benicia State Park site (Site 54), and the leaking underground storage tank at 510 West J Street (Site 36)—all of the sites are located within Downtown or in industrial areas of Benicia.

HAZARDOUS MATERIAL AND WASTE HANDLERS

Hazardous substances are commonly used and handled within Benicia under a wide variety of permitted activities and land uses. The potential for contamination at a site which handles hazardous substances depends on the type of business, types and quantities of hazardous substances, handling and management practices, control and spill containment systems, adequacy of accident prevention and safety programs, training programs and emergency response plans, and adjacent land uses. When handled properly and when used in compliance with permitting and other regulatory requirements, hazardous substances do not necessarily pose a human health concern or a threat to the environment. Nevertheless, the nature of hazardous materials implies an inherent risk to human health and the environment.

Benicia has a wide range of industries. Toxic hazards from any industry typically include hazards to employees relating to chemical use during the manufacturing processes, or inadvertent or accidental spillage during transport and handling, which could also potentially release toxic chemicals to the soil or groundwater. Other toxic hazards include inadvertent releases of airborne substances, including toxic gases, fumes, or dust, which could expose workers or the community to health hazards. In addition to toxic hazards, public health and safety concerns relate to the potential for fire and explosive hazards and transportation-related accidents.

TOXIC AIR CONTAMINANT SOURCES

As of April 1996, there were 38 inventoried sources of known Toxic Air Contaminants (TACs) in Benicia. They ranged from small dry cleaning operations to major refineries. The names and addresses of TAC sources in Benicia as well as a listing of the BAAQMD TAC inventory for sources within Benicia can be found in Table 8 and Appendix D of the Public Safety Background Report.

HAZARDOUS BUILDING MATERIALS

Some building materials commonly used in older buildings could present a public health risk if disturbed during an accident or during demolition of an existing building. These materials include asbestos, electrical equipment such as transformers and fluorescent light ballasts that contain polychlorinated biphenyls (PCBs), fluorescent lights containing mercury vapors, and lead based paints. If they are in a deteriorated condition, asbestos and lead based paint present a health risk to building occupants. If removed during demolition, these materials require special disposal procedures.

5. UTILITY HAZARDS

Utility networks provide water, energy, and information. These networks are widely distributed geographically, so access to all components of a network in an emergency may be difficult. The sections below discuss the transmission networks in place within the Planning Area and evaluate expected performance in emergencies. Figure 4-5 shows the location of these transmission lines and critical facilities in the Planning Area.

ELECTRIC POWER

Pacific Gas & Electric Company (PG&E) supplies electric power to the Planning Area. A 230 kilovolt transmission line enters the Planning Area from the west, roughly paralleling Lake Herman Road, and terminates at the Bahia substation near East Second Street and Industrial Way. This substation provides power to most of Benicia. A 115 kilovolt transmission line roughly parallels the western edge of the Planning Area. A substation located near Glen Cove, outside the Planning Area, provides power to a portion of western Benicia.

Failure of electrical power systems during or after an emergency may result from a temporary imbalance within the system or damage to its components. The systems have a high degree of redundancy, allowing for restoration of power before complete repairs are made. The most vulnerable component appears to be high voltage transmission substations. Steel lattice high voltage transmission towers generally perform well in response to ground shaking. However, tower failure may occur as a result of ground displacement of the tower foundations from earthquake-induced landsliding or liquefaction. Towers and lines could also be damaged in a fire.

NATURAL GAS

PG&E also supplies natural gas to the Planning Area. A major transmission pipeline traverses the northwestern corner of the Planning Area, with a pipeline branching off and paralleling Lake Herman Road, terminating in the vicinity of Industrial Way. Another pipeline enters the Planning Area from the west via I-780, continues along Military West Street to terminate at First Street, with short branches on K Street to West Thirteenth Street, and West Seventh Street to Southampton Road. Smaller diameter distribution lines run throughout the developed portion of the Planning Area.

Disruption to natural gas service may result from severe ground shaking and permanent ground deformation in areas of unconsolidated sediments and fill. Although some damage to transmission lines may result from landslides or liquefaction, the majority of the damage is expected within the distribution system. Areas along the Bay margin, underlain by Bay mud, alluvium, and old fill, are particularly susceptible to damage.

TRANSMISSION LINES

LEGEND

-----	Electrical (115kVa)
-----	Water-Raw
Reservoir Pump	Water-Distribution Main
-----	Sewer-Gravity
Lift Station	Sewer-Force Main
-----	Exxon-Petroleum
-----	Huntway-Refinery
-----	Telephone-Trunk
-----	Telephone-Important City Services
-----	Planning Area Boundary
-----	City Limits

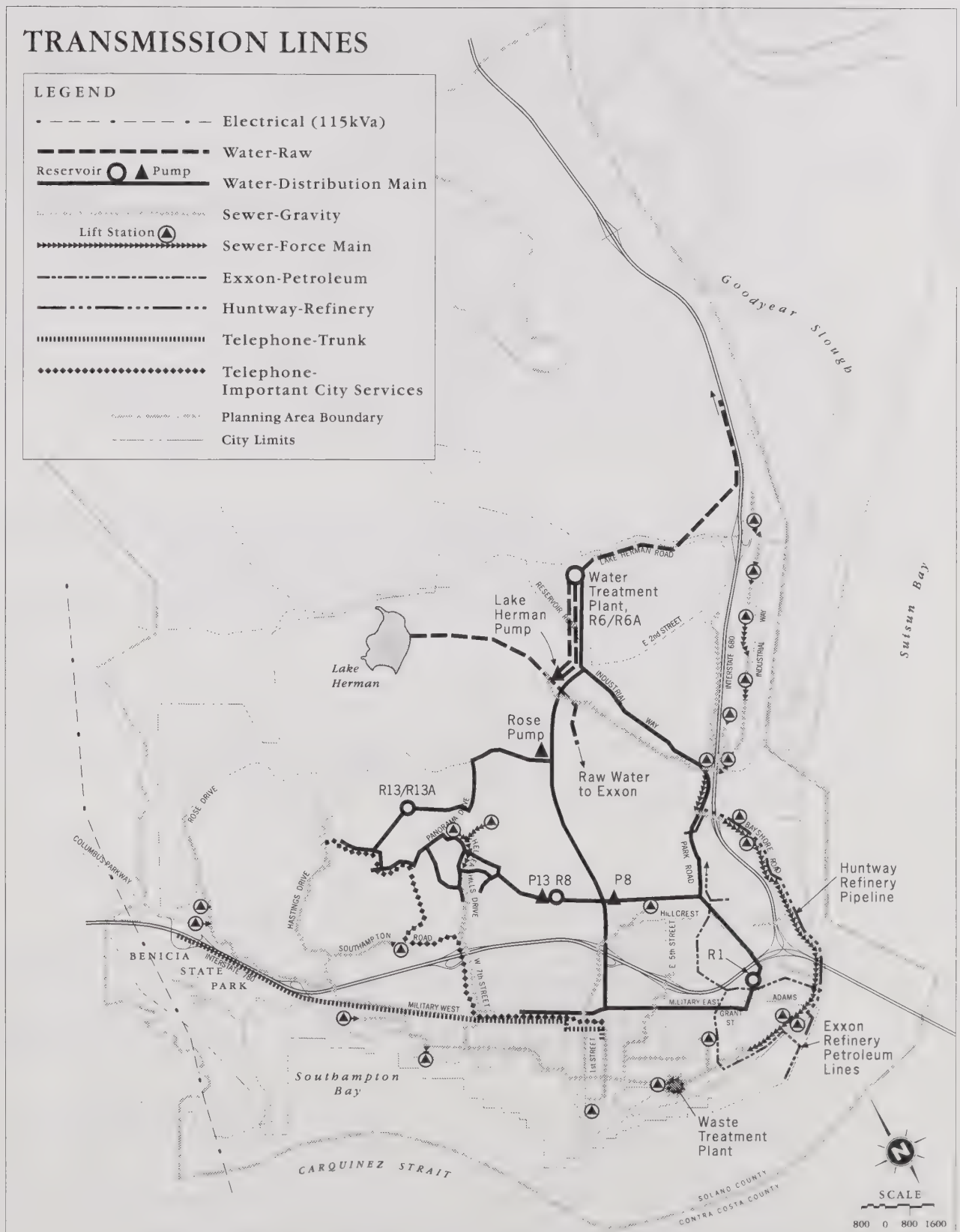


Figure 4-5. Transmission Lines and Critical Facilities

WATER SUPPLY

The water treatment plant located near Lake Herman Road produces drinking water for areas within the City limits. Water is supplied to the treatment plant through the Cordelia Transmission Main that runs along I-680 from Cordelia to Lake Herman Road, and from there to the treatment plant.

Disruption to the water supply may result from damage to pipelines, water treatment plants, storage tanks, reservoirs, or the distribution network. Damage to supply and distribution pipelines typically results from earthquake-related ground deformation such as landsliding, lurching, or liquefaction. Damage to storage tanks and reservoirs may result from severe ground shaking, resulting in deformation of the tank or connections, and possible loss of the contents. Damage to reservoirs may result from permanent ground deformation within or adjacent to the dam or shoreline. An adequate water supply needs to be available through normal means for firefighting. Water treatment plants have generally performed well in past disasters.

WASTE WATER

Damage to waste water collection and treatment systems may result from damage to the collection network and treatment facilities. The risks that face the waste water collection system also apply to the underground natural gas and potable water networks. In general, damage to pipes is related to the amount of permanent ground deformation.

The Benicia Waste Water Treatment Plant is located within an area of alluvium near the waterfront, and ground shaking during a large, local earthquake may result in some damage. The collection network may suffer damage in areas subject to soft sediment deformation, such as parts of Downtown and along the waterfront, or areas subject to landsliding or fill settlement, such as in the hilly areas.

6. AIR QUALITY/CONTAMINATION

Air Quality in Benicia

Benicia is within the Bay Area Air Quality Management District (BAAQMD). The District operates a network of monitoring sites throughout the Bay Area. The BAAQMD maintains a site in Benicia to monitor sulfur dioxide. From 1990 to 1994, the Benicia monitoring site did not record any violations of the State or federal standards for sulfur dioxide.

The closest multi-pollutant monitoring site is in Vallejo. From 1990 to 1994, the State and federal standards for carbon monoxide, nitrogen dioxide, and sulfur dioxide were met every day at the Vallejo monitoring site. The federal standard for ozone was also met, although the more stringent State standard for ozone was exceeded from one to three days per year.

Because of the relatively strong winds and the movement of air between the Bay Area and the Central Valley through the Carquinez Strait, Benicia does not experience air pollution problems as severe as those found in other more confined parts of the Bay Area.

Air quality forecasts are expected to continue to improve through 2000. The longest forecasts available, however, do not demonstrate attainment of all state and federal air quality standards.

Standards

Both the US Environmental Protection Agency (EPA) and the California Air Resources Board have established ambient air quality standards for common pollutants. These ambient air quality standards establish levels of contaminants which represent safe levels that avoid specific adverse health effects associated with each pollutant. The federal and State ambient standards were developed independently with differing purposes and methods, although both processes attempt to avoid health-related effects. In general, the California state standards are more stringent.

Another group of substances known as Toxic Air Contaminants (TACS), are injurious in small quantities and are regulated despite the absence of criteria documents. No safe ambient levels have been established for TACS. The identification, regulation and monitoring of TACS is relatively recent compared to that for criteria pollutants.

C. RESPONSES TO HAZARDS

1. COMMUNITY RIGHT-TO-KNOW

California first adopted its “Community Right-to-know” program in 1985 to oversee the handling of hazardous materials by local regulatory agencies; a succession of State statutes amended the program in 1986 and 1989. In 1986, Congress enacted the *Superfund Amendments and Reauthorization Act, Title III: The Emergency Planning and Community Right-to-Know Act* (EPCRA). Together, these statutes establish requirements relating to emergency responses to hazardous materials releases or threatened releases, and to avoidance of accidents involving certain hazardous materials. The basic requirements of Community Right-to-know include:

- Immediate reporting of releases of hazardous materials.
- Submission and update of a Hazardous Materials Business Plan and inventory as required by the local administering agency.
- Notification to the local administering agency of the handling of specified quantities of hazardous material and submission of a Risk Management Prevention Program on request.
- Annual submission by manufacturing facilities of a Toxic Chemical Release Report (Form R) if threshold amounts of certain toxic chemicals are made, processed, or used.
- Requirements for hazardous materials storage imposed by local administering agencies and Cal-OSHA standards.

2. EMERGENCY RESPONSE PLANS AND PROCEDURES

Recent disasters in California have tested communities’ emergency preparedness. The 1989 Loma Prieta Earthquake, the 1991 Oakland Hills Fire, the 1993 chemical release at a Richmond refinery, and the 1994 Northridge earthquake all demonstrated the need for preparedness in government operations, transportation and evacuation routes, utility lifelines, and emergency alert and notification.

EMERGENCY OPERATIONS PLAN

The City of Benicia maintains an Emergency Operations Plan (EOP) adopted by the City Council in 1989. It is a “multi-hazard” plan that identifies procedures for various types of emergencies. It is intended to ensure that City government can continue to function in the event of a disaster. The EOP provides guidance for the community’s response to extraordinary situations and disasters. It provides an overview of operational concepts, identifies components of the City Emergency Management Organization, and describes the overall responsibilities of federal, State, County and City officials in an emergency. The plan is periodically updated, and drills evaluating the effectiveness of the plan are conducted from time to time. The EOP designates the City

Manager as the Director of Emergency Services, responsible for overall emergency management in the City. The Fire Chief is designated as the Assistant Director of Emergency Services, responsible for maintaining the Plan and for the operation of the City Emergency Operations Center (EOC).

EVACUATION ROUTES

In an emergency, the major arterials identified in Chapter 2C, Circulation, would serve as the principal routes for evacuating people to undeveloped areas north of the City. These arterials would also serve as the principal routes for moving emergency equipment and supplies. Of particular importance are those routes which parallel I-780 in the event the freeway overpasses collapse or are blocked. Evacuation routes relating to site-specific plans are contained in Appendix H of the EOP.

3. PUBLIC SAFETY SERVICES

CRIME

Benicia has a relatively low crime rate. Benicia's crime rate appears to have generally held steady since the mid-1980s, although there have been annual fluctuations.

POLICE SERVICES

The City of Benicia Police Department provides police services to City residents. In addition to its responsibilities within the City Limits, the Department provides first response service to areas within the City's Sphere of Influence. The Department shares responsibility for policing the Benicia Industrial Park with private guards employed by individual industries in the park. The Department operates out of a single station in the civic complex.

FIRE SERVICES

City Fire Protection Standards

Each fire jurisdiction has independent authority to adopt and administer its own fire code (Health & Safety Code §13869). Most do so by adopting all or portions of the Uniform Fire Code (UFC), with additions or deletions appropriate to the jurisdiction.

The City's Fire Department has adopted the standards defined in the latest edition of the California Uniform Fire Code, with a few local amendments to these standards.

Fire Department Services

The Benicia Fire Department provides fire suppression, fire prevention, basic and advanced life support (ALS) medical services, technical rescue services, disaster preparedness, and weed abatement services for all areas within the City Limits and some nearby areas outside the city. The Department has two fire stations, with a total of two engines and one rescue squad staffed 24 hours per day. Future growth may require additional fire stations.

The City maintains mutual aid agreements with several agencies. An interagency agreement encompasses mutual responses with all other fire departments in Solano County. The City also has a contract with the State Office of Emergency Services (OES); the City has agreed to staff a State-owned engine at Station Two in exchange for an OES commitment to respond as needed. In addition to these contracts, the City has specific agreements for special hazards with the Cordelia Fire Protection District, the Contra Costa Fire Protection District for emergency responses on the Benicia - Martinez Bridge, and the Napa County Hazardous Materials Team.

In addition to fire protection services, the Fire Department responds to certain emergency incidents such as rail accidents, spills of hazardous materials, or similar accidents. The Benicia Fire Department and Exxon have joint responsibility for fire protection at the Exxon refinery. Primary fire protection at the refinery is provided by the refinery fire brigade, which is composed of firefighters and trained Emergency Medical Technicians (EMTs). All technicians and operating team supervisors at the refinery are trained in industrial fire fighting.

In order to ensure an effective response to hazardous materials incidents, industrial businesses using hazardous materials are required to prepare a business plan which identifies hazardous materials used in the operation of the business and the means for addressing potentially hazardous situations. In addition to detailed descriptions of materials used on a business site, the business plan must contain a description of how and where the hazardous materials are handled, sufficient for fire, safety, health and other appropriate agencies to prepare for emergency response (Health & Safety Code §25501[e]). These plans are discussed in Chapter 5 of the Public Safety Background Report.

4. MEDICAL SERVICES

There are no hospitals located in the city. Residents most commonly use Sutter Solano Medical Center and Kaiser Permanente, both in Vallejo. Nearby hospitals include Kaiser-Martinez, Mt. Diablo Hospital, and Contra Costa Regional Medical Center in Contra Costa County. Benicia does have a number of medical offices and clinics within the City limits.

5. COMMUNITY HAZARDS GOALS, POLICIES, AND PROGRAMS



GOAL 4.7: **Ensure that existing and future neighborhoods are safe from risks to public health that could result from exposure to hazardous materials.**

POLICY 4.7.1: **Actively recruit industries and businesses that sustain environmental quality and have sound, responsible environmental practices and policies, such as “best available control technol-**

ogy” (BACT), source reduction, reduced use of hazardous materials in production, and reduced waste.

POLICY 4.7.2: Establish a “Community Right-to-know” program to promote general public understanding of Benicia’s toxics problems as they affect current and future generations.

The Federal Environmental Protection Agency, under the Emergency Planning Community Right to Know Act (EPCRA) and the Superfund Amendments Reauthorization Act (SARA) Title 3, 1986, mandated the right of the public to information which would affect emergency response and preparedness for “credible worst case scenarios” from potential industrial hazards. (Superfund Amendments Reauthorization Act, Title 3: The Emergency Planning and Community Right-to-Know Act, enacted by Congress in 1986).

Program 4.7.A: Using documents that are already publicly available, make available in the Library a list of all known contaminated sites in Benicia, their chemical contents and conditions, and how contamination occurred.

Program 4.7.B: Provide readers with easy directions on how to access information about contaminated sites in Benicia.

Program 4.7.C: Consider establishing an ad hoc environmental task force to collect and disseminate information on environmentally sensitive sites in Benicia.

The task force would help to gather information on community toxic problems to inform and safeguard public health and safety.

Program 4.7.D: Identify, inventory, and then update sources of hazards in Benicia.

Program 4.7.E: Assess and evaluate Benicia’s preparedness to respond to hazard emergencies.

This program should be a part of the “Community Right-to-know” program and conform with the Emergency Planning Community Right-to-know Act (EPCRA).

POLICY 4.7.3: Protect existing and future development from contaminated sites, hazardous landfill waste and debris, chemical spills, and other hazards including unexploded ordnance and explosive waste.

Information on unexploded ordnance on Arsenal properties can be found in the Army Archives Search Report for the Benicia Arsenal and other federal documents.

Program 4.7.F: Work with state and federal agencies to require that unauthorized hazardous substances be removed from neighborhoods or that other appropriate measures are taken to ensure that

such substances do not present health risks to the neighborhood.

- POLICY 4.7.4:** Promote enforcement of regulatory requirements over the entire term of monitoring of identified hazardous sites within the City Limits, especially sites located in residential neighborhoods and near school playing fields and parks.
- POLICY 4.7.5:** Require that all sites known or suspected to have unexploded ordnance and/or a toxic history be tested and remediated before any development can occur.
- POLICY 4.7.6:** Prohibit residential development on any land formerly operated as landfill or dump, including land formerly owned or used by the military for military wastes, until the waste and contamination is removed with proper agency oversight, or remediated as required by the appropriate regulatory agencies.
- POLICY 4.7.7** Where environmental testing has been required by State regulatory agencies but is not yet completed withhold City approvals for site grading and other construction activities until a site evaluation is available that provides a reasonable basis for determining that it is safe to commence such activities.



GOAL 4.8: Protect sensitive receptors from hazards.

Program 4.8.A: Identify sensitive receptors in the community and develop methods of protection.

Program 4.8.B: Establish guidelines to separate sensitive receptors from those who carry, use, process, store or generate hazardous material, including ordnance.

POLICY 4.8.1: Evaluate potential hazards and environmental risks to sensitive receptors before approving development.



GOAL 4.9: Ensure clean air for Benicia residents.

POLICY 4.9.1: Establish whether a significant air pollution problem exists in Benicia and the City's role in resolving it.

Program 4.9.A: Prepare a review of existing air quality information and data sources, the quality and extent of this data, and existing regulatory requirements.

Program 4.9.B: Consult with the staff of the BAAQMD and prepare recommendations for actions that the City will take to reduce identified air quality problems toward meeting ambient air quality standards.



GOAL 4.10: Support improved regional air quality.

POLICY 4.10.1: Support implementation of Bay Area Clean Air Plan.

The Bay Area Clean Air Plan provides a strategy for attaining all the air quality standards in the nine-county Bay Area Air Quality Management District. Benicia would demonstrate consistency with the Bay Area Clean Air Plan by implementing Transportation Control Measures (TCMs) including expanding employer assistance programs, improving bicycle access and facilities, improving arterial traffic management, establishing transit use incentives, and adopting a local clean air plan, policies, and programs.

Program 4.10.A: Coordinate air quality planning efforts with other local, regional, and State agencies.

Program 4.10.B: Require that projects with identified significant air quality impacts include all feasible mitigation measures needed to reduce impacts to less than significant levels.

POLICY 4.10.2: Encourage designs and land use strategies that reduce automobile use and promote mixed use, jobs/housing balance, telecommuting, bicycle, and pedestrian facilities, and transit.



GOAL 4.11: Minimize harm from geologic hazards.

Program 4.11.A: Require geotechnical engineering reports to address site stability and building foundation integrity for projects involving substantial grading.

Program 4.11.B: Develop guidelines for site-specific geologic and geotechnical reports.

Program 4.11.C: Require peer review of geotechnical engineering reports if it is determined that City staff does not have the technical expertise to review such reports.

Program 4.11.D: Prepare a planning-level geologic hazards map of the Planning Area as needed.

Program 4.11.E: Update the geologic hazards map as new information becomes available.

Program 4.11.F: Develop a Planning Area data base of geologic information for use when making planning decisions and as a resource for the community.

Program 4.11.G: Continue and expand the Unreinforced Masonry building program (URM).

Program 4.11.H: Consider financial assistance for retrofitting of unreinforced masonry buildings.

POLICY 4.11.1: Promote public awareness of earthquake-related hazards and safety that includes training the populace to provide stop-gap emergency services following earthquakes.

Program 4.11.I: Consider implementing a citizen earthquake response system based on the San Francisco model.

The San Francisco model involves hands-on training and practice by all citizens on how to respond during an earthquake. Funding may come from private contributions.



GOAL 4.12: Accommodate runoff from existing and future development.

Flooding problems exist along Sulphur Springs Creek in the Industrial Park. Future upstream development in the Paddy Creek watershed could exacerbate existing flooding. There are many localized flooding problems within the City south of I-780. A new citywide storm drain master plan is needed, and funding will have to be identified before improvements can be implemented.

POLICY 4.12.1: Regulate runoff from new development so that post-development site peak flow rates are no greater than pre-development levels.

POLICY 4.12.2: Upgrade existing drainage facilities as necessary to correct localized drainage problems.

POLICY 4.12.3: Ensure that new development pays its fair share cost of drainage system improvements.

Program 4.12.A: Prepare a new citywide storm drain master plan.

Program 4.12.B: Adopt a combination of drainage improvement fees and other mechanisms to fund drainage improvements.

Program 4.12.C: Accelerate implementation of the existing Storm Drain Master Plan.

POLICY 4.12.4: Where practicable, discourage the use of storm drain systems, and promote stormwater management strategies which maximize opportunities for absorption of rainfall, overland conveyance of runoff, non-reservoir surface storage, and other measures that reduce development-induced impacts on peak flow rates.



GOAL 4.13: Prevent property damage caused by flooding.

POLICY 4.13.1: Continue to implement the floodplain management policy currently followed by the City.

Program 4.13.A: Require all potential developers in the Sulphur Springs Creek

floodplain to provide flood hazard mitigation measures that ensure the subject properties are not at risk of flooding during the FEMA-designated 100-year base flood.

POLICY 4.13.2:

Promote non-structural solutions to flood problems, where feasible.

Program 4.13.B:

Where appropriate, promote the use of stormwater retention basins rather than standard engineering modifications to natural channels.

Program 4.13.C:

Encourage use of meandering drainage channels in all new developments and wherever channels are replaced.



GOAL 4.14:

Prevent ground and surface water contamination.

Program 4.14.A:

Inform businesses and the public of current technology and standards for preventing ground and surface water contamination, and regulations governing hazardous material use, storage, and disposal, plus agency reporting requirements.

Program 4.14.B:

Continue to communicate with State, regional, and local agencies and legislatures to relay information on Benicia's current and potential water quality contamination concerns, particularly regarding hazardous waste sites, existing and closed landfills, new and existing waste-generating industries and commercial operations, and City waste disposal and water/sewage treatment facilities.

POLICY 4.14.1:

Implement non-point source pollution strategies.

Program 4.14.C:

Provide information to the public on provisions of the City's Stormwater Pollution Prevention Plan (SWPPP) program and preparation of SWPPPs for all construction projects of five acres or more. Implement Best Management Practices (BMPs) for stormwater runoff and erosion controls for all development.

Program 4.14.D:

Conduct an outreach program to industry and residents on how to reduce storm water-related pollution.



GOAL 4.15:

Reduce fire hazards.

POLICY 4.15.1:

Promote the creation and maintenance of natural and artificially constructed firebreaks between development and open space areas through the use of fire resistive landscaping, weed abatement, discing, and other methods.

Program 4.15.A:

Develop a Fire Hazards Response Plan for the urban wild land interface area.

- Program 4.15.B:* Conduct a fire-hazard outreach program to neighborhood groups, the elderly, and the handicapped.
- Program 4.15.C:* Continue and expand routine fire inspections for businesses for compliance with the Uniform Fire Code and the California Fire Code.
- Program 4.15.D:* Continue the yearly weed abatement program.
- POLICY 4.15.2:* Promote the use of fire-resistant landscaping in public and private developments.



- GOAL 4.16:** **Require hazardous materials and hazardous waste management handling and disposal procedures that are protective of human health and the environment.**
- POLICY 4.16.1:** Support the Solano County Hazardous Waste Management Plan and its goals, policies, and implementation guidelines for hazardous waste reduction, hazardous waste facility siting, hazardous waste handling and disposal, public education and involvement, and program coordination with regulatory requirements.
- Program 4.16.A:* As part of the permitting process, ensure that the County reviews the design and operating plans for handling and disposal of hazardous wastes for existing and proposed new businesses.
- Program 4.16.B:* Contact the Solano County Environmental Management Department annually to confirm that hazardous waste generators in Benicia have been granted permits for handling hazardous substances in compliance with federal and State laws, that they dispose of their wastes in accordance with applicable laws, and that they have filed Hazardous Materials Management Plans and Risk Management and Prevention Plans.
- Program 4.16.C:* Continue reviewing monitoring records for new and existing hazardous waste storage areas for compliance with federal and State law.
- POLICY 4.16.2:** Continue, promote, and expand the City's Household Hazardous Waste Program.
- Program 4.16.D:* Promote use of Benicia's and Pacheco's "drop-off" facilities.
- POLICY 4.16.3:** Control water runoff that comes from hazardous substance handling or that enters hazardous substance handling areas.

Program 4.16.E:

Investigate the potential for the collection and testing of industrial area surface runoff prior to discharge to prevent discharge of hazardous substances into the environment.



GOAL 4.17:

Minimize hazardous waste generation.

POLICY 4.17.1:

Ensure enforcement of Title 22, §67100 of the California Code of Regulations regarding preparation and implementation of source reduction plans by hazardous waste generators.

Program 4.17.A:

Contact the Solano County Environmental Management Department each September to confirm that new businesses have filed their source reduction plans, if applicable.

Program 4.17.B:

Situate all new hazardous material storage and handling areas to minimize the possibility of environmental contamination in the event of an accidental spill.

Program 4.17.C:

Enclose areas where hazardous liquids are handled to minimize any rain or moisture coming into contact with hazardous substances.



GOAL 4.18:

Ensure the proper and thorough clean-up of hazardous waste sites including the Rose Drive/Braitto landfill area.

POLICY 4.18.1:

Monitor and participate in the remedial planning process for major hazardous waste sites within the City and monitor implementation of any selected remedial actions to ensure that human health and the environment are protected over the long term.

Program 4.18.A:

Continue to work with the California Department of Toxic Substances Control (DTSC) to expedite the proper and thorough clean-up of waste in the Rose Drive area.



GOAL 4.19:

Ensure the best possible closure of IT, considering the long-term health effects upon sensitive receptors in the community.

Program 4.19.A:

For the IT site, continue to communicate Benicia's position that the only acceptable closure plan is a groundwater-divide-based alternative (i.e., a closure plan based on removing waste and contamination that lie outside the main site drainage).



GOAL 4.20:

Reduce health and safety hazards associated with hazardous materials users, hazardous waste generators, and hazardous waste disposal sites and toxic air contaminants.

POLICY 4.20.1:

Establish buffer zones between sensitive land uses and those land uses which involve the significant use, storage, or disposal of hazardous materials, hazardous waste, or toxic air contaminants.

Program 4.20.A:

Maintain and designate land along East Second Street for non-residential purposes.

Program 4.20.B:

Follow siting criteria for Treatment, Storage, and Disposal (TSD) facilities contained in the Solano County Hazardous Waste Management Plan. (22 California Code of Regulations (CCR) §66260-18; State Health and Safety Code §25201.)

Program 4.20.C:

Evaluate the potential for requiring risk assessment for any new TSD facility, and if indicated by the risk assessment, require a larger buffer zone that will be protective of human health.

Program 4.20.D:

Review building applications for any proposed TSD facilities to ensure that the requirements of the Solano County Hazardous Waste Management Plan are met.

Program 4.20.E:

Coordinate with Solano County Environmental Management Department to ensure enforcement of community Right-to-know laws (Chapter 6.95 of the Health and Safety Code, §25500, et seq.).

Program 4.20.F:

Enforce the Hazardous Waste Property and Border Zone Property Law (Health and Safety Code, Article 11, §25520 through §25241).



GOAL 4.21:

Reduce significant hazards associated with pipelines, and high voltage transmission lines.

Program 4.21.A:

Continue to implement existing adopted policies governing development near pipelines.

Program 4.21.B:

Set back all residential uses, schools, and public buildings at least 150 feet from the edge of 230 kilovolt electric transmission line easements.



GOAL 4.22:

Update and maintain the City's Emergency Response Plan.

- POLICY 4.22.1:** Provide an early community alert and notification system and safe evacuation plan for emergency incidents.
- Program 4.22.A:* Provide the public with information and training on what to do until help arrives in emergency situations.
- Program 4.22.B:* Develop a siren system to alert and notify the community in an emergency.
- Program 4.22.C:* Request voluntary donations from identified sources of hazards to implement the Emergency Response Plan.
- Program 4.22.D:* Consider a City radio station to inform residents in the event of an emergency.
- POLICY 4.22.2:** Develop at least two exit routes, where feasible, for new developments. One of the exits could be a pedestrian route.
- POLICY 4.22.3:** Provide the public with information on specified emergency evacuation routes.
- Program 4.22.E:* Provide an evacuation route from the Arsenal in addition to Military East.

D. NOISE

The principal noise generator in Benicia is vehicular traffic. People are most sensitive to noise levels which disturb their comfort at home.

The Noise section describes the existing and projected future noise environments in Benicia so that harmful and annoying sound levels can be avoided or minimized.

Major noise sources are identified, estimated noise levels throughout the community are reported, the effects of noise on the community are discussed, and ways to minimize unwanted noise are outlined.

1. HUMAN REACTION TO NOISE

Three qualities characterize the subjective effect of noise on the listener: (1) the frequency of the noise, (2) the intensity of the noise, and (3) the time-varying character of the noise.

Researchers have grappled with how to translate objective measurements of sound into directly correlated measures of public reaction to noise. The descriptors of community noise in current use are the results of these efforts and represent simplified, practical measurement tools to gauge community response.

Table 4-1 shows the decibel levels of common noises.

Table 4-1. Decibel Levels of Common Noises

20	Soft whisper
40	Quiet office, living room, bedroom—away from traffic.
50	Light traffic at a distance, refrigerator, gentle breeze.
60	Average conversation, air conditioner at 20 feet, sewing machine.
65	Quiet typewriter.
70	Busy traffic, office tabulator, noisy restaurant. (This level may begin to affect hearing if one is constantly exposed.)
75	Vacuum cleaner.
80	Subway, heavy city traffic, ringing alarm clock at two feet, average factory noise. (Dangerous if exposure continues for more than eight hours.)
85	Truck traffic, noisy home appliances (washing machine, blender, food processor), power lawn mower. (Dangerous, even if exposure is less than eight hours.)
95	Noisy factory, shop tools.
100	Elevated train, chain saw, pneumatic drill. (Dangerous, even if exposure is less than two hours.)
120	Rock concert in front of speakers, sandblasting, thunderclap. (Danger is immediate.)
140	Jet airplane at 200 feet, gunshot blast. (Any length of exposure is extremely dangerous.)

The known effects of noise on people include hearing loss (not generally a factor with community noise), communication interference, sleep interference, physiological responses, and annoyance. Although the wide range of individual reactions to noise makes it extremely difficult to measure how noise affects individual health, medical studies suggest a correlation between noise and mental stress.

A *decibel* is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities.

COMMUNICATION INTERFERENCE

Communication interference is one of the primary environmental noise problems, and includes speech interference and interference of activities such as watching television. Normal conversational speech is in the range of 60 to 65 dB, and any noise in this range or louder may interfere with speech.

SLEEP INTERFERENCE

Sleep interference is a major noise concern. Noise can make it difficult to fall asleep, can create momentary disturbances of natural sleep patterns by causing shifts from deep to lighter stages, and can cause awakening.

Extensive research has been conducted on the effect of noise on sleep disturbance. Recommended values for desired sound levels in residential bedroom space range from 25 to 45 dB with 35 to 40 dB being the norm. The National Association of Noise Control Officials published data on the probability of sleep disturbance with various single event noise levels. Based on experimental sleep data related to noise exposure, a 75 dB interior noise level event will cause noise-induced awakening in 30 percent of all cases.

PHYSIOLOGICAL RESPONSES

Physiological responses are those measurable effects of noise on people which are realized as changes in pulse rate, blood pressure, *etc.* While such effects can be induced and observed, it is not known to what extent these physiological responses cause harm. Generally, physiological responses are a reaction to a loud, short-term noise such as a rifle shot or a very loud jet overflight.

ANNOYANCE

Annoyance is the most difficult of all noise responses to describe. Annoyance is a very individual characteristic and can vary widely from person to person. What one person considers tolerable can be quite unbearable to another. The level of annoyance

depends on the characteristics of the noise (*i.e.*, loudness, frequency, time, and duration), and how much activity interference (*e.g.*, speech interference and sleep interference) results from the noise. However, the level of annoyance is also a function of the attitude of the receiver. Personal sensitivity to noise varies widely. It has been estimated that 2 to 10 percent of the population is highly susceptible to noise not of their own making, while approximately 20 percent are unaffected by noise. Attitudes are affected by the relationship between the person and the noise source. (Is it our dog or the neighbor's?) Whether we believe that someone is trying to abate the noise will also affect our level of annoyance.

The following conclusions have been established through extensive study:

1. Except in carefully controlled laboratory experiments, an increase of only one dBA cannot be perceived by humans.
2. Outside of the laboratory, a three dBA increase is considered to be just noticeable.
3. A change of five dBA is required before any noticeable change in community reaction would be expected.
4. A 10 dBA increase is subjectively heard as a doubling of loudness and would most certainly cause community response.

2. NOISE IN THE COMMUNITY

EXISTING NOISE LEVELS

Once noise levels are computed or measured, they can be mapped. Noise levels are mapped as contours. Each contour line indicates an area on the inside of the line which has a higher noise level than the contour's value; the area on the outside of the line has a lower noise level than the contour's value. Because local topography, vegetation, or intervening structures may significantly affect noise exposure at a particular location, the noise contours should not be considered site-specific. Figure 4-6 shows existing noise contours in Benicia.

These noise contours were formulated based on a community noise survey conducted in October and November 1995. The results indicated that typical exterior noise levels in noise sensitive areas (*i.e.*, nursing homes, churches, theaters, residential uses, parks, libraries, and schools) are in the range of 51 dB to 63 dB L_{dn} . Traffic on local roadways and I-680 and I-780, industrial activities, and neighborhood activities are the contributing factors for background noise levels in the majority of the study area. Table 4-2 is a summary of the survey.

PROJECTED NOISE LEVELS

Traffic on I-680 and I-780 is expected to increase through the year 2015. The hourly traffic flow and mix of trucks and private automobiles during a typical 24-hour period is not expected to change. No major increase in railroad operation is expected to occur in the near future. Figure 4-7 indicates future noise contours.

EXISTING NOISE EXPOSURE CONTOURS

LEGEND

Planning Area Boundary

City Limits

60 dB Ldn contours
(For roadways which have no contours shown, 60 dB is within roadway R.O.W.)

SP Railroad 60 dB Ldn contours
Residential Areas

★ Sensitive Receptors

- 1 Matthew Turner Elementary School
- 2 Joe Henderson Elementary School
- 3 Benicia Middle School
- 4 Benicia High School
- 5 Mary Farmer Elementary School
- 6 Robert Semple Elementary School
- 7 Benicia Senior Center
- 8 Mills Elementary School
- 9 Liberty High School
- 10 St. Dominic's School
- 11 Casa de Vilarrasa

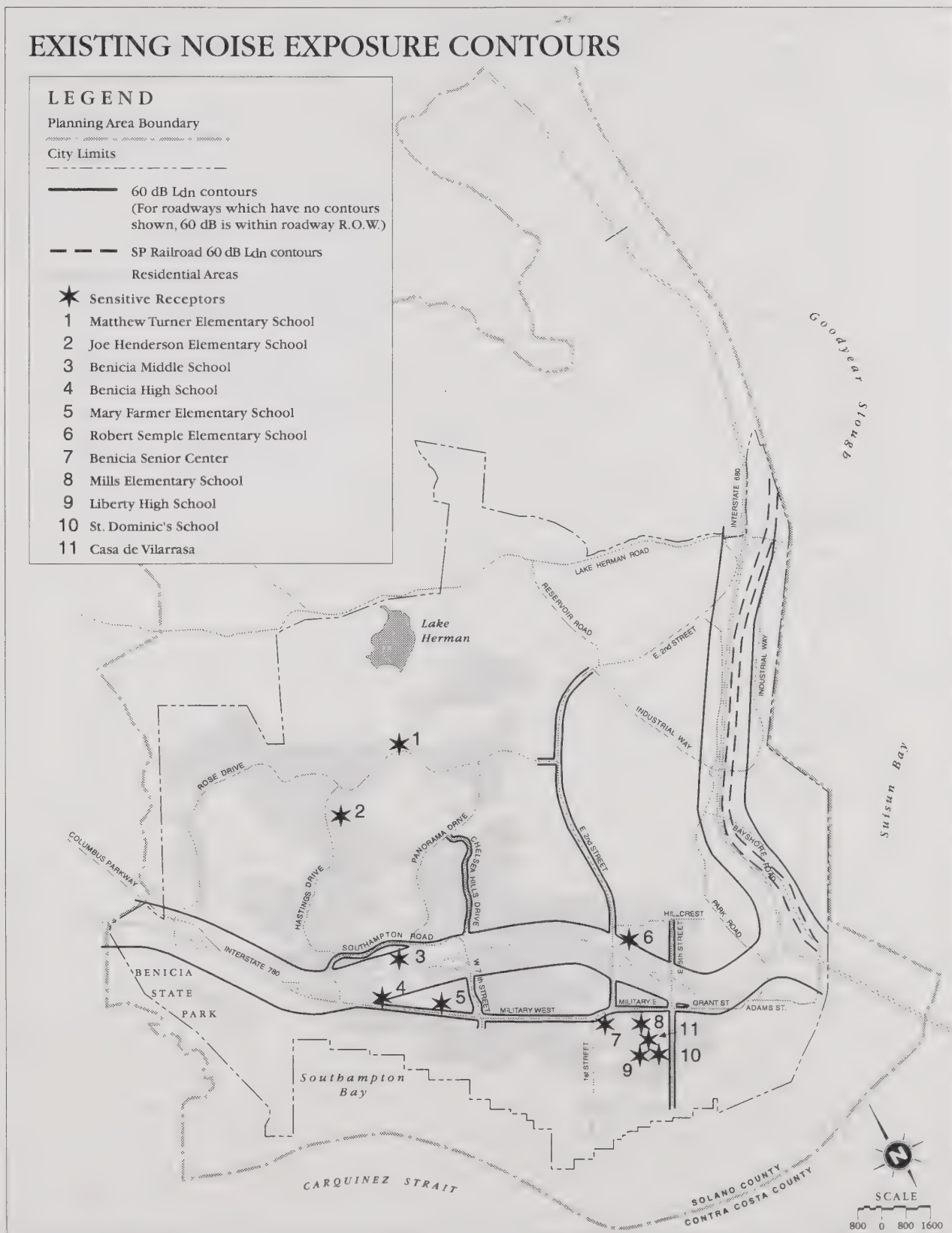


Figure 4-6. Existing Noise Contours

Table 4-2. Summary of Measured Exterior Noise Levels and Estimated Day-Night Average Levels (L_{dn}) in Areas Containing Noise-Sensitive Land Uses

Site	Location	Time/Period	Sound Level, dB				
			L_{eq}	L_{50}	L_{90}	L_{max}	Estimated L_{dn}
1*	329 Columbia Circle	—	—	—	—	—	54.2
2*	507 Bristol Court	—	—	—	—	—	54.0
3*	803 Elaine	—	—	—	—	—	50.8
4*	1781 Lindo Street	—	—	—	—	—	63.2
5	Corner of Reservoir Road and Lake Herman Road	Ld(1)	51.5	39	32	66.0	53.1
		Ld(2)	55.5	48	37	70.5	
		Ln	41.0	35	30	60.0	
6	Benicia Community Park	Ld(1)	46.0	45	40	57.0	52.0
		Ld(2)	46.0	44	40	62.5	
		Ln	45.5	37	32	60.0	
7	Southampton Park	Ld(1)	56.5	53	46	72.0	56.0
		Ld(2)	53.5	47	39	68.5	
		Ln	47.0	40	36	59.0	
8	Turnbull Park	Ld(1)	48.5	45	43	63.0	52.2
		Ld(2)	53.5	48	44	70.5	
		Ln	43.0	39	37	57.5	
9	City Park (Second St. & West K Street)	Ld(1)	57.0	57	55	64.9	60.7
		Ld(2)	57.6	56	53	67.2	
		Ln	53.5	51	48	65.0	
10	Bridgeview Park	Ld(1)	51.9	45	41	67.8	51.6
		Ld(2)	49.8	45	43	60.7	
		Ln	42.8	40	38	58.0	
11	Benicia Middle School Athletic Fields/ Bay View Villas	Ld(1)	54.5	54	52	61.6	58.0
		Ld(2)	53.1	53	50	58.2	
		Ln	51.0	49	47	56.0	
12	Matthew Turner Shipyard Park	Ld(1)	58.4	58	54	63.1	56.8
		Ld(2)	53.1	51	48	63.1	
		Ln	47.3	45	42	58.0	

* Continuous Monitoring Site

L_d = Measured noise level during daytime hours (7:00 am - 10:00 pm)

L_n = Measured noise level during nighttime hours (10:00 pm - 7:00 am)

L_{eq} = The average noise level during a given time period

$L_{50,90}$ = The average noise level experienced 50 and 90 percent of a given time period

L_{max} = The maximum sound level recorded during a noise event

L_{dn} = The average noise level during a 24-hour day after 10 decibels has been added to the levels between 10 pm and 7 am.

FUTURE NOISE EXPOSURE CONTOURS

LEGEND

Planning Area Boundary

City Limits

— 60 dB Ldn Roadway noise contours/
Year 2010

- - - 60 dB Ldn Railroad noise contours

Residential Areas

★ Sensitive Receptors

- 1 Matthew Turner Elementary School
- 2 Joe Henderson Elementary School
- 3 Benicia Middle School
- 4 Benicia High School
- 5 Mary Farmer Elementary School
- 6 Robert Semple Elementary School
- 7 Benicia Senior Center
- 8 Mills Elementary School
- 9 Liberty High School
- 10 St. Dominic's School
- 11 Casa de Vilarrasa

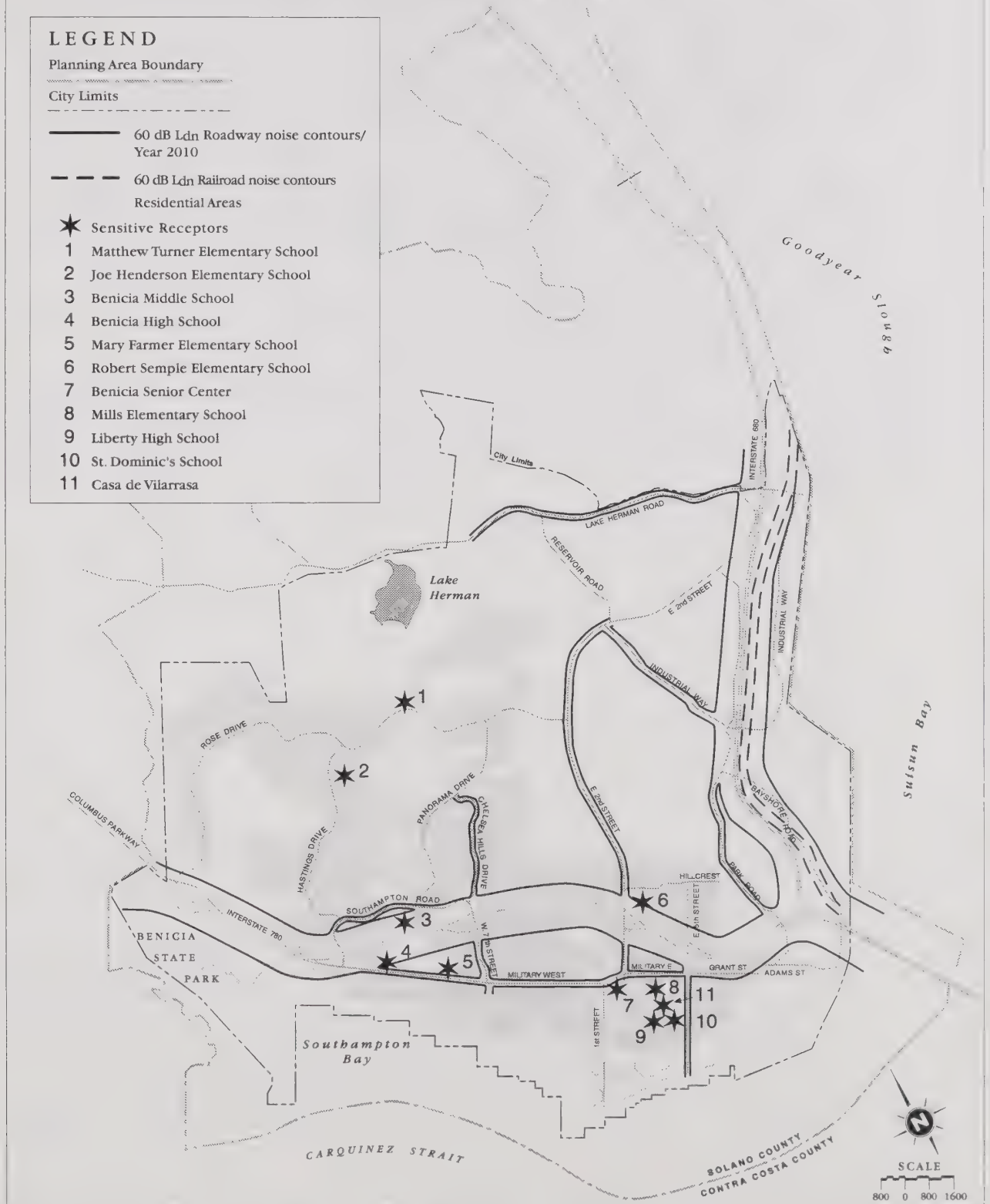


Figure 4-7. Future Noise Contours

3. PERFORMANCE STANDARDS FOR NOISE SENSITIVE USES

TRANSPORTATION NOISE SOURCES

Table 4-3 provides specific standards for determining the compatibility of proposed noise-sensitive land uses with transportation noise sources (refer to glossary for definition). Where noise-sensitive projects are proposed within areas which exceed the standards contained in Table 4-3, it is necessary to prepare a report that (a) performs an analysis of noise impacts, and (b) recommends mitigation measures to reduce noise levels on the site to comply with the standards in Table 4-3. This table is only to be used with proposed projects; the City's noise ordinance governs noise associated with existing uses.

Table 4-3. Maximum Allowable Noise Exposure for New Noise-Sensitive Uses From Transportation Noise Sources

Land Use	Outdoor Activity Areas ¹	Interior Spaces	
	L_{dn}/C_{NEL} , dB	L_{dn} /dB	L_{eq} , dB ²
Residential	60 ³	45	—
Transient Lodging	65 ⁴	45	
Hospitals, Nursing Homes	60 ³	45	—
Theaters, Auditoriums, Music Halls	—	—	35
Churches, Meeting Halls	60 ³	—	40
Office Buildings, Commercial Uses, Industrial, Manufacturing, Utilities ⁵	—	—	45
Schools, Libraries, Museums	60 ³	—	45
Playgrounds, Neighborhood Parks	65	—	—

¹ Where the location of outdoor activity areas is unknown, or does not exist, the exterior noise level standard will be applied to the property line of the receiving land use. Refer to glossary for definition of outdoor activity area.

² As determined for a typical worst-case hour during periods of use.

³ Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/C_{NEL} or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/C_{NEL} may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table. If these noise levels cannot be complied with this will constitute a significant environmental impact.

⁴ In the case of hotel/motel facilities or other transient lodging; with no proposed outdoor activity areas such as pool areas, only the interior noise level criterion will apply.

⁵ Standards would only apply to areas requiring good speech intelligibility such as offices, conference rooms, etc.

STATIONARY NOISE SOURCES

Table 4-4 provides specific performance standards for determining the compatibility of proposed noise-sensitive land uses with stationary noise sources. The performance standards are for new noise-sensitive developments which may be affected by an existing stationary noise source. The performance standards also apply to new developments that include a stationary noise source which may affect an existing noise-sensitive development.

The intent of these performance standards is both to prevent new noise sources from encroaching on existing noise-sensitive developments and to prevent new noise-sensitive developments from encroaching on existing uses.

Noise sources evaluated relative to the performance standards in Table 4-4 should be considered with respect to their standard daily or weekly operating conditions. Noise sources may produce unusual noise levels due to temporary equipment malfunction, or unusual atmospheric conditions. Noise levels associated with these infrequent conditions are exempt from the performance standards contained in Table 4-4. In addition, the performance standards are not to be applied to safety signals or warning devices. In the event an acoustical study is required of an applicant, refer to Appendix I: "Requirements for an Acoustical Analysis."

Table 4-4. Noise Level Performance Standards for Noise-Sensitive Land Uses Which May Be Affected by Stationary Noise Sources

Land Use	Exterior Hourly L_{eq} dB		Interior Hourly L_{eq} dB	
	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.	Daytime 7 a.m. to 10 p.m.	Nighttime 10 p.m. to 7 a.m.
Residential	55	50	40	35
Transient Lodging	55	50	40	35
Hospitals	—	—	40	35
Nursing Homes	55	50	40	35
Theaters, Auditoriums	—	—	35	35
Churches	55	50	40	40
Schools	55	50	45	45
Libraries	55	50	45	45

Stationary noise sources include industrial operations, outdoor recreation facilities, HVAC units, loading docks, etc.

The above standards may be adjusted upwards to allow for an increase in the existing ambient hourly L_{eq} caused by a proposed project. An increase of less than 3dB is permitted, even if the standards in Table 4-4 are exceeded; an increase of 3dB or greater constitutes a significant environmental impact, unless the increase does not cause the standards in Table 4-4 to be exceeded.

The noise level standards contained above shall be applied to a typical hour of operation. When a peak hour of operation is expected to occur consistently during daily or weekly operations, the standards shall also be applied to those operations.

Each of the noise standards specified above shall be lowered by five dB for tonal noises (humming, high-pitched tones, speech music, or recurring impulsive noises). This lowering of the standard does not apply to residential units established in conjunction with industrial or commercial caretaker dwellings. (See Glossary for definition of tonal noise).

The City may choose to apply the noise level performance standards at designated outdoor activity areas, in lieu of the property line.

The above standards do not apply to safety signals or warning devices.

For noise sources that occur on an infrequent basis and are considered to be safety equipment (such as flaring or pressure relief valves), a maximum noise level of 75 dB is acceptable, as measured from the receiver's property line. Noise levels which are projected to exceed this maximum are considered a significant environmental impact.

Where outdoor activity areas do not exist and/or are not expected to be affected, the City may choose to only apply the interior noise level criteria. For example, in the case of single family residences which do not have second story patios or outdoor activity areas, the City may choose to only apply an interior noise level standard at the second story interior spaces.

4. COMMUNITY NOISE GOALS, POLICIES, AND PROGRAMS



GOAL 4.23: **Reduce or eliminate the effects of excessive noise.**

POLICY 4.23.1: Evaluate the compatibility of proposed projects with respect to existing and future transportation noise levels by utilizing Tables 4-3 and 4-4.

Program 4.23.A: Investigate and implement techniques to reduce traffic noise.

POLICY 4.23.2: Use noise dampening building standards, site design, landscaping, and setbacks instead of sound walls, wherever possible.

POLICY 4.23.3: Use available techniques such as building insulation, berms, building design and orientation, buffer yards, and staggered operating hours to minimize noise at the source.

POLICY 4.23.4: Control development of noise-sensitive land uses in areas exposed to existing or projected noise which exceed the levels specified in Tables 4-3 and 4-4 unless the project includes specific, effective mitigation measures to reduce interior and exterior noise levels to those specified in Tables 4-3 and 4-4.

Program 4.23.B: Investigate conditioning construction of live/work units with a requirement to record a “notice of special restrictions” which would acknowledge the noisy nature of existing adjacent industrial uses.

POLICY 4.23.5: Accommodate roadway improvement projects for build-out of the General Plan by recognizing that existing noise-sensitive uses may be exposed to increased noise levels from roadway repairs, increased traffic, and increased travel speeds. When it is not practical to reduce traffic noise levels to those in Table 4-4, the following criteria will be used as a test of significance for the environmental review of roadway improvement projects:

(a) Where existing noise levels are less than 60 dB L_{dn} at the outdoor activity area of a noise-sensitive use, a 5 dB L_{dn} increase in noise levels due to a roadway improvement project will be considered significant;

(b) Where existing noise levels range between 60 and 65 dB L_{dn} at the outdoor activity area of a noise-sensitive use, a 3 dB L_{dn} increase in noise levels due to a roadway improvement project will be considered significant; and

(c) Where existing noise levels are greater than 65 dB L_{dn} at the outdoor activity area of a noise-sensitive use, a 1.5 dB L_{dn}

increase in noise levels due to a roadway improvement project will be considered significant.

Program 4.23.C:

If needed, revise the City's noise ordinance and consider incorporating the noise level performance standards in Table 4-4.

POLICY 4.23.6:

Attempt to reduce noise in areas already highly impacted by excessive noise.

Program 4.23.D:

Identify sources of noise in the community (such as flight patterns, construction noise, traffic, railroads, industrial, and amplified sound). Develop measures to reduce excessive noise to acceptable levels.

GLOSSARY

ABBREVIATIONS

ABAG	Association of Bay Area Governments	CEQA	California Environmental Quality Act
ADA	Americans with Disabilities Act	CIP	Capital Improvements Program
ADT	Average daily trips made by vehicles or persons in a 24-hour period	CLG	Certified Local Government
AFDC	Aid for Families with Dependent Children (federal program)	CMP	Congestion Management Program
BAAQMD	Bay Area Air Quality Management District	CNEL	Community Noise Equivalent Level
BACT	Best available control technology	COG	Council of Governments
BART	Bay Area Rapid Transit	dB	Decibel
BCDC	Bay Area Conservation and Development Commission	DEIR	Draft Environmental Impact Report
BIP	Benicia Industrial Park	DRC	Design Review Commission
BMR	Below-market-rate dwelling unit	DTSC	Department of Toxic Substances Control
BMP	Best Management Practices	EIR	Environmental Impact Report (State)
BUSD	Benicia Unified School District	EOC	Emergency Operations Center
CA	California	EOP	Emergency Operations Plan
CBD	Central Business District	EPCRA	Emergency Planning and Community Right-to-Know Act
CCR	California Code of Regulations	FAR	Floor Area Ratio
CDBG	Community Development Block Grant	FEMA	Federal Emergency Management Agency

GPOC	General Plan Oversight Committee	PG&E	Pacific Gas & Electric
GPPS	Goals, Policies, and Programs	PD	Planned Development
HCD	Housing and Community Development Department of the State of California.	R & D	Research and Development
HETF	Housing Element Task Force	RMPP	Risk Management Prevention Program
HUD	U S Department of Housing and Urban Development	RWQCB	Regional Water Quality Control Board
HHWP	Hazardous Household Waste Program	§	Section
IGPS	Issues, Goals, and Policies	SMARA	Surface Mining and Reclamation Act
I.O.O.F.	International Order of Odd Fellows	SOI	Sphere of Influence
IT	International Technology Corporation	TAC	Toxic Air Contaminants
LAFCO	Local Agency Formation Commission	TSD	Treatment, Storage, and Disposal (facility)
LOS	Level of Service	TSM	Transportation Systems Management
MTC	Metropolitan Transportation Commission	UBC	Uniform Building Code
OES	Office of Emergency Services	UFC	Uniform Fire Code
OSHA	Occupational Health and Safety Administration	UGB	Urban Growth Boundary
PCB	Polychlorinated Biphenyl	UPRR	Union Pacific Railroad
		URM	Unreinforced Masonry Building
		WWTP	Waste Water Treatment Plant

GLOSSARY

Access/Egress • The ability to enter a site from a roadway and exit a site onto a roadway by motorized vehicle.

Acres, Gross • The area of a lot or site including easements and right-of-way to be dedicated, but excluding existing public rights-of-way.

Acres, Net • The portion of a site that can actually be built upon. The following generally are not included in the net acreage of a site: public or private road rights-of-way, public open space, water bodies and flood ways.

Adverse Impact • A negative consequence for the physical, social, or economic environment resulting from an action or project.

Affordability Requirements • Provisions established by a public agency to require that a specific percentage of housing units in a project or development remain affordable to very low- and low- income households for a specified period.

Affordable Housing • Housing capable of being purchased or rented by a household with very low, low, or moderate income, based on a household's ability to make monthly payments necessary to obtain housing. Housing units for moderate income must sell or rent for a monthly cost not greater than 30 percent of area median income.

Agency • The governmental entity, department, office, or administrative unit responsible for carrying out regulations.

Agricultural Preserve • Land designated for agriculture or conservation. (See "Williamson Act.")

Agriculture • Use of land for the production of food and fiber, including the growing of crops and/or the grazing of animals on natural prime or improved pasture land.

Air Pollution • Concentrations of substances found in the atmosphere that exceed naturally occurring quantities and are undesirable or harmful in some way.

Alley • A narrow service way, either public or private, that provides a permanently reserved but secondary means of public access not intended for general traffic circulation. Alleys typically are located along rear property lines.

Alquist-Priolo Act, Earthquake Fault Zone • A state designated seismic hazard zone along traces of potentially and recently active faults, in which specialized geologic investigations must be prepared prior to approval of certain types of new development.

Alluvium • Sediment deposited by flowing water, as in a riverbed, flood plain, or delta.

Ambient • Surrounding on all sides; used to describe measurements of existing conditions with respect to traffic, noise, air and other environments.

Analysis • The examination of a subject, particularly its component parts and their interrelationships.

Annex, *v.* • To incorporate a land area into an existing district or municipality, with a resulting change in the boundaries of the annexing jurisdiction.

Apartment • (1) One or more rooms of a building used as a place to live, in a building containing at least one other

unit used for the same purpose. (2) A separate suite, not owner occupied, that includes kitchen facilities and is designed for and rented as the home, residence, or sleeping place of one or more persons living as a single housekeeping unit.

Appropriate • An act, condition, or state that is considered suitable.

Archaeological • Relating to the material remains of past human life, culture, or activities.

Architectural Control; Architectural Review • Regulations and procedures requiring the exterior design of structures to be suitable, harmonious, and in keeping with the general appearance, historic character, and/or style of surrounding areas. A process used to exercise control over the design of buildings and their settings. (See "Design Review.")

Area; Area Median Income • As used in State of California housing law with respect to income eligibility limits established by the US Department of Housing and Urban Development (HUD), "area" means metropolitan area or non-metropolitan county. In non-metropolitan areas, the "area median income" is the higher of the county median family income or the statewide non-metropolitan median family income.

Area of Interest • That area having a direct physical and social influence on a city's planning area but not appropriate for annexation.

Arterial • Streets that link residential, commercial, and industrial districts with the highway system. They serve primarily through-travel as opposed to providing direct access to adjacent land uses.

Arterial (Major) • A roadway which connects freeways to minor arterials and collector streets. Major arterials generally provide four to six lanes.

Arterial (Minor) • A roadway which connects major arterials to collectors and local streets. Minor arterials generally provide two to four travel lanes.

Assisted Housing • Generally multi-family rental housing, but sometimes single-family ownership units, whose construction, financing, sales prices, or rents have been subsidized by federal, state, or local housing programs including, but not limited to Federal Section 8 (new construction, substantial rehabilitation, and loan management set-asides), Federal Sections 213, 236, and 202, Federal Section 221(d)(3) (below-market interest rate program), Federal Section 101 (rent supplement assistance), CDBG, FmHA Section 515, multi-family mortgage revenue bond programs, local redevelopment and in lieu fee programs, and units developed pursuant to local inclusionary housing and density bonus programs. By January 1, 1992, all California Housing Elements are required to address the preservation or replacement of assisted housing that is eligible to change to market rate housing by 2002.

Attainment • Compliance with State and federal ambient air quality standards within an air basin.

Base Flood • In any given year, a 100-year flood that has a one percent likelihood of occurring, and is recognized as a standard for acceptable risk.

Below-market-rate (BMR) • (1) Any housing unit specifically priced to be sold or rented to low- or moderate-income households for an amount less

than the fair-market value of the unit. Both the State of California and the US Department of Housing and Urban Development set standards for determining which households qualify as “low income” or “moderate income.” (2) The financing of housing at less than prevailing interest rates.

Best Management Practices • A policy, program, practice, rule, regulation, or ordinance for which sufficient data are available to indicate that identified objectives can be met; that the practice is technically and economically reasonable and not environmentally or socially unacceptable; and that the practice is not otherwise unreasonable for most of the stated industry organizations to carry out.

Bicycle Path (Class I facility) • A paved route not on a street or roadway and expressly reserved for bicycles traversing an otherwise unpaved area. Bicycle paths may parallel roads but typically are separated from them by landscaping.

Bicycle Lane (Class II facility) • A corridor expressly reserved for bicycles, existing on a street or roadway in addition to any lanes for use by motorized vehicles.

Bicycle Route (Class III facility) • A facility shared with motorists and identified only by signs, a bicycle route has no pavement markings or lane stripes.

Bikeways • A term that encompasses bicycle lanes, bicycle paths, and bicycle routes.

Book Fee • A charge the City makes in association with the granting of building permits to provide money for City Library acquisition of books.

Buffer Zone • An area of land separating two distinct land uses that acts to soften or mitigate the effects of one land use on the other.

Building • Any structure used or intended for supporting or sheltering any use or occupancy.

Building Height • The vertical dimension measured from the finished grade at all points on the site to a warped plane an equal height above all points on the site.

Buildout; Build-out • Development of land to its full potential or theoretical capacity as permitted under current or proposed planning or zoning designations. (See “Carrying Capacity (3).”)

Business Park • (See “Industrial Park.”)

Business Services • A subcategory of commercial land use that permits establishments primarily engaged in rendering services to other business establishments on a fee or contract basis, such as advertising and mailing; building maintenance; personnel and employment services; management and consulting services; protective services; equipment rental and leasing; photo finishing; copying and printing; travel; office supply; and similar services.

CALFED • A joint State and federal program to develop a long-term solution to Bay-Delta water resources and endangered species issues.

California Environmental Quality Act (CEQA) • A State law requiring State and local agencies to regulate activities with consideration for environmental protection. If a proposed activity has the potential for a significant adverse environmental impact, an Environmental

Impact Report (EIR) must be prepared and certified as to its adequacy before taking action on the proposed project. General Plans require the preparation of a “program EIR.”

California Housing Finance Agency (CHFA) • A State agency, established by the Housing and Home Finance Act of 1975, which is authorized to sell revenue bonds and generate funds for the development, rehabilitation, and conservation of low-and moderate-income housing.

Caltrans • California Department of Transportation.

Capital Improvements Program (CIP) • A program, administered by a city or county government and reviewed by its planning commission, which schedules permanent improvements, usually for a minimum of five years in the future, to fit the projected fiscal capability of the local jurisdiction. The program generally is reviewed annually, for conformance to and consistency with the general plan.

Carrying Capacity • Used in determining the potential of an area to absorb development: (1) The level of land use, human activity, or development for a specific area that can be accommodated permanently without an irreversible change in the quality of air, water, land, or plant and animal habitats. (2) The upper limits of development beyond which the quality of human life, health, welfare, safety, or community character within an area will be impaired. (3) The maximum level of development allowable under current zoning. (See “Buildout.”)

Census • The official decennial enumeration of the population conducted by the federal government.

Channelization • The straightening and/or deepening of a watercourse for purposes of storm-runoff control or ease of navigation. Channelization often includes lining of stream banks with a retaining material such as concrete.

Character • Special physical characteristics of a structure or area that set it apart from its surroundings and contribute to its individuality.

Circulation Element • One of the seven State-mandated elements of a local general plan, it contains adopted goals, policies, and implementation programs for the planning and management of existing and proposed thoroughfares, transportation routes, and terminals, as well as local public utilities and facilities, all correlated with the land use element of the general plan.

Circulation System • A network of transit, automobile, bicycle and pedestrian rights-of-way that connect origins and destinations.

City • City with a capital “C” generally refers to the government or administration of the City of Benicia. City with a lower case “c” may mean any city, or may refer to the geographical area of a city (e.g., the city’s bikeway system.)

Community Noise Equivalent Level (CNEL) • The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.

Collector • Streets which link arterials and local streets that are generally two lanes in width.

Commercial • A land use classification that permits facilities for the buying and selling of commodities and services.

Commercial Strip • Commercial development, usually one store deep, that fronts on a major street for a distance of one city block or more. Includes individual buildings on their own lots, with or without on-site parking, and small linear shopping centers with shallow on-site parking in front of the stores.

Community Center • A public facility in which educational, therapeutic and/or recreational programs are provided.

Community Development Block Grant (CDBG) • A grant program administered by the US Department of Housing and Urban Development (HUD) on a formula basis for entitlement communities, and by the State Department of Housing and Community Development (HCD) for non-entitled jurisdictions. This grant allots money to cities and counties for housing rehabilitation and community development, including public facilities and economic development.

Community Noise Equivalent Level (CNEL) • A 24-hour energy equivalent level derived from a variety of single-noise events, with weighting factors of 5 and 10 dBA applied to the evening (7 PM to 10 PM) and nighttime (10 PM to 7 AM) periods, respectively, to allow for the greater sensitivity to noise during these hours.

Community Park • Land with full public access intended to provide recreation opportunities beyond those supplied by neighborhood parks. Community parks are larger in scale than neighborhood parks but smaller than regional parks. They serve people within a three mile radius.

Community Service Area • A geographic subarea of a city or county used for the planning and delivery of parks, recreation, and other human services based on an assessment of the service needs of the population in that subarea.

Compatible • Capable of existing together without conflict or ill effects.

Composting • The treatment of solid organic refuse through aerobic, biologic decomposition.

Concurrency • Installation and operation of facilities and services needed to meet the demands of new development simultaneous with the development.

Condominium • A structure of two or more units, the interior spaces of which are individually owned; the balance of the property (both land and building) is owned in common by the owners of the individual units. (See "Townhouse.")

Congestion Management Plan (CMP) • A mechanism employing growth management techniques, including traffic level of service requirements, standards for public transit, trip reduction programs involving transportation systems management and jobs/ housing balance strategies, and capital improvement programming, for the purpose of controlling and/or reducing the cumulative regional traffic impacts of development. AB 1791, effective August 1, 1990, requires all cities, and counties that include urbanized areas, to adopt by December 1, 1991, and annually update a Congestion Management Plan.

Conservation • The management of natural resources to prevent waste, destruction, or degradation. (See "Conservation Element.")

Conservation Element • One of the seven State-mandated elements of a local general plan, it contains adopted goals, policies, and implementation programs for the conservation, development, and use of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources.

Consistency, Consistent With • Free from significant variation or contradiction. The various diagrams, text, goals, policies, and programs in the general plan must be consistent with each other, not contradictory or preferential. The term “consistent with” is used interchangeably with “conformity with.” The courts have held that the phrase “consistent with” means “agreement with; harmonious with.” Webster defines “conformity with” as meaning harmony, agreement when used with “with.” The term “conformity” means in harmony therewith or agreeable to (§58 Ops. Cal. Atty. Gen. 21, 25 [1975]). California State law also requires that a general plan be internally consistent and also requires consistency between a general plan and implementation measures such as the zoning ordinance.

County • County with a capital “C” generally refers to the government or administration of a county. County with a lower case “c” may mean any county, or may refer to the geographical area of a county (e.g., the county’s road system.)

Criterion • A standard upon which a judgment or decision may be based. (See “Standards.”)

Critical Facility • Facilities housing or serving many people, that are necessary

in the event of an earthquake or flood, such as hospitals, fire, police, and emergency service facilities, utility “lifeline” facilities, such as water, electricity, and gas supply, sewage disposal, and communications and transportation facilities.

Cul-de-sac • A short street or alley with only a single means of ingress and egress at one end and with a large turnaround at its other end.

Cumulative Impact • As used in CEQA, the total impact resulting from the accumulated impacts of individual projects or programs over time.

dB • Decibel; a unit used to express the relative intensity of a sound as it is heard by the human ear.

dBA • The “A-weighted” scale for measuring sound in decibels; weighs or reduces the effects of low and high frequencies in order to simulate human hearing. Every increase of 10 dBA doubles the perceived loudness though the noise is actually ten times more intense.

Density, Residential • The number of permanent residential dwelling units per acre of land. Densities specified in the General Plan are expressed in units per gross acre of land (excluding water bodies). (See “Acres, Gross.”)

Density Bonus • The allocation of development rights that allow a parcel to accommodate additional square footage or additional residential units beyond the maximum for which the parcel is zoned, usually in exchange for the provision or preservation of an amenity at the same site or at another location. Under California law, a housing development that provides 20 percent of its units for lower income households, or ten percent of its

units for very low-income households, or 50 percent of its units for seniors, is entitled to a density bonus. (See “Development Rights, Transfer of.”)

Density, Control of • A limitation on the occupancy of land. Density can be controlled through zoning in the following ways: use restrictions, minimum lot-size requirements, floor area ratios, land use-intensity ratios, setback and yard requirements, minimum house-size requirements, ratios comparing number and types of housing units to land area, limits on units per acre, and other means. Allowable density often serves as the major distinction between residential districts.

Density Transfer • A way of retaining open space by concentrating densities—usually in compact areas adjacent to existing urbanization and utilities—while leaving unchanged historic, sensitive, or hazardous areas. In some jurisdictions, for example, developers can buy development rights of properties targeted for public open space and transfer the additional density to the base number of units permitted in the zone in which they propose to develop.

Design Review • The comprehensive evaluation of a development and its impact on neighboring properties and the community as a whole, from the standpoint of site and landscape design, architecture, materials, colors, lighting, and signs, in accordance with a set of adopted criteria and standards. In Benicia’s Design Review system, projects are reviewed against certain standards and guidelines by the Design Review Commission and the Planning Department. (See “Architectural Control.”)

Detention Dam/Basin/Pond •

Dams may be classified according to the broad function they serve, such as storage, diversion, or detention. Detention dams are constructed to retard flood runoff and minimize the effect of sudden floods. Detention dams fall into two main types. In one type, the water is temporarily stored, and released through an outlet structure at a rate that will not exceed the carrying capacity of the channel downstream. Often, the basins are planted with grass and used for open space or recreation in periods of dry weather. The other type, most often called a Retention Pond, allows for water to be held as long as possible and may or may not allow for the controlled release of water. In some cases, the water is allowed to seep into the permeable banks or gravel strata in the foundation. This latter type is sometimes called a Water-Spreading Dam or Dike because its main purpose is to recharge the underground water supply. Detention dams are also constructed to trap sediment. These are often called Debris Dams.

Developable Land • Land that is suitable as a location for structures and that can be developed free of hazards to, and without disruption of, or significant impact on, natural resource areas.

Developer • An individual who or business that prepares raw land for the construction of buildings or causes to be built physical building space for use primarily by others, and in which the preparation of the land or the creation of the building space is in itself a business and is not incidental to another business or activity.

Development • The physical extension and/or construction of urban land uses. Development activities include: subdivision of land; construction or alteration of structures, roads, utilities, and other facilities; installation of septic systems; grading; deposit of refuse, debris, or fill materials; and clearing of natural vegetative cover (with the exception of agricultural activities). Routine repair and maintenance activities are exempted.

Development Agreement • A legislatively-approved contract between a jurisdiction and a person having legal or equitable interest in real property within the jurisdiction (California Government Code §5865 *et. seq.*) that “freezes” certain rules, regulations, and policies applicable to development of a property for a specified period of time, usually in exchange for certain concessions by the owner.

Development Fee • (See “Impact Fee.”)

Development Rights • The right to develop land by a land owner who maintains fee-simple ownership over the land or by a party other than the owner who has obtained the rights to develop. Such rights usually are expressed in terms of density allowed under existing zoning. For example, one development right may equal one unit of housing or may equal a specific number of square feet of gross floor area in one or more specified zone districts. (See “Development Rights, Transfer of [TDR].”)

Development Rights, Transfer of (TDR) • Also known as “Transfer of Development Credits,” a program that can relocate potential development from areas where proposed land use or environmental impacts are considered undesirable (the “donor” site) to another

(“receiver”) site chosen on the basis of its ability to accommodate additional units of development beyond that for which it was zoned, with minimal environmental, social, and aesthetic impacts. (See “Development Rights.”)

Disability • Physical or mental impairment that substantially limits one or more of the major life activities of an individual, or a record of such impairment, or being regarded as having such an impairment.

Discourage, *v.* • To advise or persuade to refrain from.

Distribution Use • (See “Warehousing Use.”)

District • (1) An area of a city or county that has a unique character identifiable as different from surrounding areas because of distinctive architecture, streets, geographic features, culture, landmarks, activities, or land uses. (2) A portion of the territory of a city or county within which uniform zoning regulations and requirements apply; a zone.

Diversity • Differences among otherwise similar elements that give them unique forms and qualities. E.g., housing diversity can be achieved by differences in unit size, tenure, or cost.

Duplex • A detached building under single ownership that is designed for occupation as the residence of two families living independently of each other.

Dwelling Unit • A room or group of rooms (including sleeping, eating, cooking, and sanitation facilities, but not more than one kitchen), that constitutes an independent housekeeping unit, occupied or intended for occupancy by one household on a long-term basis.

Easement • Usually the right to use property owned by another for specific purposes or to gain access to another property. For example, utility companies often have easements on the private property of individuals to be able to install and maintain utility facilities.

Easement, Conservation • A tool for acquiring open space with less than full-fee purchase, whereby a public agency buys only certain specific rights from the land owner. These may be positive rights (providing the public with the opportunity to hunt, fish, hike, or ride over the land) or they may be restrictive rights (limiting the uses to which the land owner may devote the land in the future.)

Ecology • The interrelationship of living things to one another and their environment; the study of such interrelationships.

Economic Development Board (EDB) • The agency charged with identifying, investigating, and promoting economic needs, opportunities, and interests in Benicia.

Ecosystem • An interacting system formed by a biotic community and its physical environment.

Elderly Persons age 62 and older. (See “Seniors.”)

Emergency Shelter • A facility that provides immediate and short-term housing and supplemental services for the homeless. Supplemental services may include food, counseling, and access to other social programs. (See “Homeless” and “Transitional Housing.”)

Emission Standard • The maximum amount of pollutant legally permitted to be discharged from a single source, either mobile or stationary.

Encourage, *v.* • To stimulate or foster a particular condition through direct or indirect action by the private sector or government agencies.

Endangered Species • A species of animal or plant is considered to be endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes.

Enhance, *v.* • To improve existing conditions by increasing the quantity or quality of beneficial uses or features.

Environment • CEQA defines environment as “the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, mineral, flora, fauna, noise, and objects of historic or aesthetic significance.”

Environmental Impact Report (EIR) • A report complying with the California Environmental Quality Act which assesses all the environmental characteristics of an area and determines what effects or impacts will result if the area is altered or disturbed by a proposed action. (See “California Environmental Quality Act.”)

Environmental Impact Statement (EIS) • Under the National Environmental Policy Act, a statement on the effect of development proposals and other major actions that significantly affect the environment.

Erosion • (1) The loosening and transportation of rock and soil debris by wind, rain, or running water. (2) The gradual wearing away of the upper layers of earth.

Exaction • A contribution or payment required as an authorized precondition for receiving a development permit;

usually refers to mandatory dedication (or fee in lieu of dedication) requirements found in many subdivision regulations.

Fair Market Rent • The rent, including utility allowances, determined by the United States Department of Housing and Urban Development for purposes of administering the Section 8 Existing Housing Program.

Family • (1) Two or more persons related by birth, marriage, or adoption [US Bureau of the Census]. (2) An individual or a group of persons living together who constitute a *bona fide* single-family housekeeping unit in a dwelling unit, not including a fraternity, sorority, club, or other group of persons occupying a hotel, lodging house or institution of any kind [California].

Farmland • Refers to eight classifications of land mapped by the US Department of Agriculture Soil Conservation Service. The five agricultural classifications defined below—except Grazing Land—do not include publicly owned lands for which there is an adopted policy preventing agricultural use.

Grazing Land • Land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock. This classification does not include land previously designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance, and heavily brushed, timbered, excessively steep, or rocky lands which restrict the access and movement of livestock.

Fault • A fracture in the earth's crust forming a boundary between rock masses that have shifted.

Feasible • Capable of being accomplished in a successful manner within a reasonable time taking into account economic, environmental, social, and technological factors.

Finding(s) • The result(s) of an investigation and the basis upon which decisions are made. Findings are used by government agents and bodies to justify action taken by the entity.

Fiscal Impact Analysis • A projection of the direct public costs and revenues resulting from population or employment change to the local jurisdiction(s) in which the change is taking place. Enables local governments to evaluate relative fiscal merits of general plans, specific plans, or projects.

Fiscal Impact Report (FIR) • A report projecting the public costs and revenues that will result from a proposed program or development. (See "Fiscal Impact Analysis.")

Flood, 100-Year • The magnitude of a flood expected to occur on the average every 100 years, based on historical data. The 100-year flood has a 1/100, or one percent, chance of occurring in any given year.

Flood Insurance Rate Map

(FIRM) • For each community, the official map on which the Federal Insurance Administration has delineated areas of special flood hazard and the risk premium zones applicable to that community.

Flood Plain • The relatively level land area on either side of the banks of a stream regularly subject to flooding. That part of the flood plain subject to a one percent chance of flooding in any given year is designated as an "area of special

flood hazard” by the Federal Insurance Administration.

Floodway • The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the “base flood” without cumulatively increasing the water surface elevation more than one foot. No development is allowed in floodways.

Floor Area Ratio (FAR) • The gross floor area permitted on a site divided by the total net area of the site, expressed in decimals to one or two places. For example, on a site with 10,000 net sq. ft. of land area, a FAR of 1.0 will allow a maximum of 10,000 gross sq. ft. of building floor area to be built. On the same site, a FAR of 1.5 would allow 15,000 sq. ft. of floor area; an FAR of 2.0 would allow 20,000 sq. ft.; and a FAR of 0.5 would allow only 5,000 sq. ft. Also commonly used in zoning, FARs typically are applied on a parcel-by-parcel basis.

Freeway • A high-speed, high-capacity, limited-access transportation facility intended to serve regional and sub-regional travel. At times they are also used for intra-city travel in large cities.

Gateway • A point along a roadway entering a city or county at which a motorist gains a sense of having left the environs and of having entered the city or county.

General Plan • A compendium of city or county policies regarding long-term development, in the form of maps and accompanying text. The General Plan is a legal document required of each local agency by the State of California Government Code §65300 et seq. and adopted by the City Council or Board of Supervisors. In California, the General Plan has 7

mandatory elements. (See Chapter 1 of this Plan which explains how elements are in the format of this General Plan.)

Geologic Review • The analysis of geologic hazards, including all potential seismic hazards, surface ruptures, liquefaction, landsliding, mudsliding, and the potential for erosion and sedimentation.

Geological • Pertaining to rock or solid matter.

Goal • A general, overall, and ultimate purpose, aim, or end toward which the City or County will direct effort.

Grasslands • Land reserved for pasturing or mowing, in which grasses are the predominant vegetation.

Greenhouse Effect • The warming of the Earth’s atmosphere due to accumulated carbon dioxide and other gases in the upper atmosphere. These gases absorb energy radiated from the Earth’s surface, “trapping” it in the same manner as glass in a greenhouse traps heat. Potential sea-level rise is a concern.

Ground Failure • Ground movement or rupture caused by strong shaking during an earthquake. Includes landslide, lateral spreading, liquefaction, and subsidence.

Ground Shaking • Ground movement resulting from the transmission of seismic waves during an earthquake.

Groundwater • Water under the earth’s surface, often confined to aquifers capable of supplying wells and springs.

Growth Management • (See Appendix A.)

Guidelines • General statements of policy direction around which specific details may be later established.

Habitat • The physical location or type of environment in which an organism or biological population lives or occurs.

Handicapped • A person determined to have a physical impairment or mental disorder expected to be of long or indefinite duration. Many such impairments or disorders are of such a nature that a person's ability to live independently can be improved by appropriate housing conditions.

Hazardous Material • Any substance that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. The term includes, but is not limited to, hazardous substances and hazardous wastes.

High Occupancy Vehicle (HOV) • Any vehicle other than a driver-only automobile (*e.g.*, a vanpool, a bus, or two or more persons to a car).

Highway • High-speed, high-capacity, limited-access transportation facility serving regional and county-wide travel. Highways may cross at a different grade level.

Hillsides • Land that has an average percent of slope equal to or exceeding fifteen percent.

Historic; Historical • An historic building or site is one that is noteworthy for its significance in local, state, or national history or culture, its architecture or design, or its works of art, memorabilia, or artifacts.

Historic Preservation • The preservation of historically significant structures and neighborhoods until such time as, and in order to facilitate, restoration and

rehabilitation of the building(s) to a former condition.

Homeless • Persons and families who lack a fixed, regular, and adequate nighttime residence. Includes those staying in temporary or emergency shelters or who are accommodated with friends or others with the understanding that shelter is being provided as a last resort. California Housing Element law, §65583(c)(1) requires all cities and counties to address the housing needs of the homeless. (See "Emergency Shelter" and "Transitional Housing.")

Hotel • A facility in which guest rooms or suites are offered to the general public for lodging with or without meals and for compensation, and where no provision is made for cooking in any individual guest room or suite. (See "Motel.")

Household • All those persons-related or unrelated—who occupy a single housing unit. (See "Family.")

Households, Number of • The count of all year-round housing units occupied by one or more persons. The concept of *household* is important because the formation of new households generates the demand for housing. Each new household formed creates the need for one additional housing unit or requires that one existing housing unit be shared by two households. Thus, household formation can continue to take place even without an increase in population, thereby increasing the demand for housing.

Housing, Inclusionary • Regulations that increase housing choice by providing the opportunity to construct more diverse and economical housing to meet the needs of low- and moderate-income

families. Often such regulations require a minimum percentage of housing for low- and moderate-income households in new housing developments and in conversions of apartments to condominiums.

Housing and Community Development Department of the State of California (HCD) • The State agency that has principal responsibility for assessing, planning for, and assisting communities to meet the needs of low- and moderate-income households.

Housing Element • One of the seven State-mandated elements of a local general plan, it assesses the existing and projected housing needs of all economic segments of the community, identifies potential sites adequate to provide the amount and kind of housing needed, and contains adopted goals, policies, and implementation programs for the preservation, improvement, and development of housing. Under State law, Housing Elements must be updated every five years.

Housing and Urban Development, US Department of (HUD) • A cabinet-level department of the federal government that administers housing and community development programs.

Housing Unit • The place of permanent or customary abode of a person or family. A housing unit may be a single-family dwelling, a multi-family dwelling, a condominium, a modular home, a mobile home, a cooperative, or any other residential unit considered real property under State law. A housing unit has, at least, cooking facilities, a bathroom, and a place to sleep. It also is a dwelling that cannot be moved without substantial damage or unreasonable cost. (See “Dwelling Unit,” “Family,” and “Household.”)

Identity • A consistent quality that makes a city, place, area, or building unique and gives it a distinguishing character.

Image • The mental picture or impression of a city or place taken from memory and held in common by members of the community.

Impact • The effect of any direct man-made actions or indirect repercussions of man-made actions on existing physical, social, or economic conditions.

Impact Fee • A fee, also called a development fee, levied on the developer of a project by a city, county, or other public agency as compensation for otherwise-unmitigated impacts the project will produce. California Government Code §66000, *et seq.*, specifies that development fees shall not exceed the estimated reasonable cost of providing the service for which the fee is charged. To lawfully impose a development fee, the public agency must verify its method of calculation and document proper restrictions on use of the fund.

Implementation • Actions, procedures, programs, or techniques that carry out policies.

Improvement • The addition of one or more structures or utilities on a parcel of land.

Incorporation • Creation of a new city.

Industrial • The manufacture, production, and processing of consumer goods. Industrial is often divided into “heavy industrial” uses, such as construction yards, quarrying, and factories; and “light industrial” uses, such as research and development and less intensive warehousing and manufacturing.

Industrial Park; Business Park • A planned assemblage of buildings designed for “Workplace Use.”

Infrastructure • Public services and facilities, such as sewage-disposal systems, water-supply systems, other utility systems, and roads.

Integrity • As used in historic preservation, the degree to which authenticity of a property’s historic identity has been maintained, evidenced by the survival of substantial physical characteristics that existed during the property’s historic period.

Intensity, Building • For residential uses, the actual number or the allowable range of dwelling units per net or gross acre. For non-residential uses, the actual or the maximum permitted floor area ratios (FARS).

Inter-agency • Indicates cooperation between or among two or more discrete agencies in regard to a specific program.

Intermittent Stream • A stream that normally flows for at least thirty (30) days after the last major rain of the season and is dry a large part of the year.

Issues • Important unsettled community matters or problems that are identified in a community’s general plan and dealt with by the plan’s goals, objectives, policies, plan proposals, and implementation programs.

Jobs/Housing Balance; Jobs/Housing Ratio • The jobs/housing ratio divides the number of jobs in an area by the number of employed residents. A ratio of 1.0 indicates a balance. A ratio greater than 1.0 indicates a net in-commute; less than 1.0 indicates a net out-commute.

Joint Powers Authority (JPA) • A legal arrangement that enables two or more units of government to share authority in order to plan and carry out a specific program or set of programs that serves both units.

Landmark • (1) A building, site, object, structure, or significant tree, having historical, architectural, social, or cultural significance and marked for preservation by the local, state, or federal government. (2) A visually prominent or outstanding structure or natural feature that functions as a point of orientation or identification.

Landscaping • Planting—including trees, shrubs, and ground covers—suitably designed, selected, installed, and maintained as to enhance a site or roadway permanently.

Landslide • Downslope movement of soil and/or rock, which typically occurs during an earthquake or following heavy rainfall.

Land Use • The occupation or utilization of land or water area for any human activity or any purpose defined in the General Plan.

Land Use Classification • A system for classifying and designating the appropriate use of properties.

Land Use Element • A required element of the General Plan that uses text and maps to designate the future use or reuse of land within a given jurisdiction’s planning area. The land use element serves as a guide to the structuring of zoning and subdivision controls, urban renewal and capital improvements programs, and to official decisions regarding the distribution and intensity of development and the location of public facilities and open space. (See “Mandatory Element.”)

Land Use Regulation • A term encompassing the regulation of land in general and often used to mean those regulations incorporated in the General Plan, as distinct from zoning regulations (which are more specific).

Lateral Spreading • Lateral movement of soil, often as a result of liquefaction during an earthquake.

L_{dn} • Day-Night Average Sound Level. The A-weighted average sound level for a given area (measured in decibels) during a 24-hour period with a 10 dB weighting applied to night-time sound levels. The L_{dn} is approximately numerically equal to the CNEL for most environmental settings.

Lease • A contractual agreement by which an owner of real property (the lessor) gives the right of possession to another (a lessee) for a specified period of time (term) and for a specified consideration (rent).

L_{eq} • Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. L_{eq} is typically computed over 1, 8, and 24-hour sample periods. L_{dn} represents the daily level of noise exposure averaged on an annual basis, while L_{eq} represents the average noise exposure for a shorter time period, typically one hour.

L_{max} • The maximum sound level recorded during a noise event.

L_n • The sound level exceeded “n” percent of the time during a sample interval. L_{10} equals the level exceeded 10 percent of the time (L_{90} , L_{50} , etc.)

Level of Service (LOS) Standard • A standard used by government agencies to measure the quality or effectiveness of a

municipal service, such as police, fire, or library, or the performance of a facility, such as a street or highway.

Level of Service (LOS) Traffic • A scale that measures the amount of traffic that a roadway or intersection can accommodate, based on such factors as maneuverability, driver dissatisfaction, and delay.

LOS A • Indicates a relatively free flow of traffic, with little or no limitation on vehicle movement or speed.

LOS B • Describes a steady flow of traffic, with only slight delays in vehicle movement and speed. All queues clear in a single signal cycle.

LOS C • Denotes a reasonably steady, high-volume flow of traffic, with some limitations on movement and speed, and occasional backups on critical approaches.

LOS D • Designates the level where traffic nears an unstable flow. Intersections still function, but short queues develop and cars may have to wait through one cycle during short peaks.

LOS E • Represents traffic characterized by slow movement and frequent (although momentary) stoppages. This type of congestion is considered severe, but is not uncommon at peak traffic hours, with frequent stopping, long-standing queues, and blocked intersections.

LOS F • Describes unsatisfactory stop-and-go traffic characterized by “traffic jams” and stoppages of long duration. Vehicles at signalized intersections usually have to wait through one or more signal changes, and “upstream” intersections may be blocked by the long queues.

Liquefaction • The transformation of loose, wet soil from a solid to a liquid state, often as a result of ground shaking during an earthquake.

Live/work Quarters • Buildings or spaces within buildings that are used jointly for commercial and residential purposes where the residential use of the space is secondary or accessory to the primary use as a place of work.

Local Agency Formation Commission (LAFCO) • A five- or seven-member commission within each county that reviews and evaluates all proposals for formation of special districts, incorporation of cities, annexation to special districts or cities, consolidation of districts, and merger of districts with cities. Each county's LAFCO is empowered to approve, disapprove, or conditionally approve such proposals. The LAFCO members generally include two county supervisors, two city council members, and one member representing the general public. Some LAFCOs include two representatives of special districts.

Local Streets • (See "Streets, local.")

Lot • (See "Site.")

Low-income Household • A household with an annual income usually no greater than 80 percent of the area median family income adjusted by household size, as determined by a survey of incomes conducted by a city or a county, or in the absence of such a survey, based on the latest available eligibility limits established by the US Department of Housing and Urban Development (HUD) for the Section 8 housing program. (See "Area.")

Low-income Housing Tax Credits • Tax reductions provided by the federal and State governments for investors in housing for low-income households.

Lower Arsenal • Land south of I-780, generally between the freeway and the

Port of Benicia (water related industrial lands).

Maintain, *v* • To keep in an existing state. (See "Preserve, *v*.")

Mandatory Element • A component of the General Plan mandated by State law. California State law requires that a General Plan include elements dealing with seven subjects—circulation, conservation, housing, land use, noise, open space, and safety—and specifies to various degrees the information to be incorporated in each element. (See "Land Use Element.")

Manufactured Housing • Residential structures that are constructed entirely in the factory, and which since June 15, 1976, have been regulated by the federal Manufactured Home Construction and Safety Standards Act of 1974 under the administration of the US Department of Housing and Urban Development (HUD). (See "Mobile Home.")

Marsh • Any area designated as marsh or swamp on the largest scale United States Geologic Survey topographic map most recently published. A marsh usually is an area periodically or permanently covered with shallow water, either fresh or saline.

Master Plan • A plan prepared in accordance with Chapter 17.68 of the Benicia Zoning Ordinance to ensure orderly planning for the development of large, unsubdivided areas of the city, consistent with the General Plan.

May • That which is permissible.

Mineral Resource • Land on which known deposits of commercially viable mineral or aggregate deposits exist. This designation is applied to sites determined

by the State Division of Mines and Geology as being a resource of regional significance, and is intended to help maintain the quarrying operations and protect them from encroachment of incompatible land uses.

Minimize, *v.* • To reduce or lessen, but not necessarily to eliminate.

Mining • The act or process of extracting resources, such as coal, oil, or minerals, from the earth.

Mitigate, *v.* • To ameliorate, alleviate, or avoid to the extent reasonably feasible.

Mixed-use • Properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with significant functional interrelationships and a coherent physical design. A “single site” may include contiguous properties.

Mobile Home • A structure, transportable in one or more sections, built on a permanent chassis and designed for use as a single-family dwelling unit and which (1) has a minimum of 400 square feet of living space; (2) has a minimum width in excess of 102 inches; (3) is connected to all available permanent utilities; and (4) is tied down (a) to a permanent foundation on a lot either owned or leased by the homeowner or (b) is set on piers, with wheels removed and skirted, in a mobile home park. (See “Manufactured Housing.”)

Moderate-income Household • A household with an annual income between the lower income eligibility limits and 120 percent of the area median family income adjusted by household size, usually as established by the US

Department of Housing and Urban Development (HUD) for the Section 8 housing program. (See “Area” and “Low-income Household.”)

Motel • (1) A hotel for motorists. (2) A facility in which guest rooms or suites are offered to the general public for lodging with or without meals and for compensation, and where guest parking is provided in proximity to guest rooms. Quite often, provision is made for cooking in individual guest rooms or suites. (See “Hotel.”)

Multiple Family Building • A detached building designed and used exclusively as a dwelling by three or more families occupying separate suites.

Municipal Services • Services traditionally provided by local government, including water and sewer, roads, parks, schools, and police and fire protection.

Must • That which is mandatory.

National Environmental Policy Act (NEPA) • An act passed in 1974 establishing federal legislation for national environmental policy, a council on environmental quality, and the requirements for environmental impact statements.

National Flood Insurance

Program • A federal program that authorizes the sale of federally subsidized flood insurance in communities where such flood insurance is not available privately.

National Register of Historic

Places • The official list, established by the National Historic Preservation Act, of sites, districts, buildings, structures, and objects significant in the nation’s history or whose artistic or architectural value is unique.

Natural State • The condition existing prior to development..

Necessary • Essential or required.

Need • A condition requiring supply or relief. The City or County may act upon findings of need within or on behalf of the community.

Neighborhood • A planning area commonly identified as such in a community's planning documents, and by the individuals residing and working within the neighborhood. Documentation may include a map prepared for planning purposes, on which the names and boundaries of the neighborhood are shown.

Neighborhood Park • City- or county-owned land intended to serve the recreation needs of people living or working within one-half mile radius of the park.

Neighborhood Unit • According to one widely-accepted concept of planning, the neighborhood unit should be the basic building block of the city. It is based on the elementary school, with other community facilities located at its center and arterial streets at its perimeter. The distance from the school to the perimeter should be a comfortable walking distance for a school-age child; there would be no through traffic uses. Limited industrial or commercial would occur on the perimeter where arterials intersect. This was the model for American suburban development after World War II.

Neotraditional Development • An approach to land use planning and urban design that promotes the building of neighborhoods with a mix of uses and housing types, architectural variety, a

central public gathering place, interconnecting streets and alleys, and edges defined by greenbelts or boulevards. The basic goal is integration of the activities of potential residents with work, shopping, recreation, and transit all within walking distance.

Noise • Any sound that is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. Noise, simply, is "unwanted sound."

Noise Attenuation • Reduction of the level of a noise source using a substance, material, or surface, such as earth berms and/or solid concrete walls.

Noise Contour • A line connecting points of equal noise level as measured on the same scale. Noise levels greater than the 60 L_{dn} contour (measured in dBA) require noise attenuation in residential development.

Noise Element • One of the seven State-mandated elements of a local general plan, it assesses noise levels of highways and freeways, local arterials, railroads, airports, local industrial plants, and other ground stationary sources, and adopts goals, policies, and implementation programs to reduce the community's exposure to noise.

Noise Sensitive Land Use • Hospitals, nursing homes, schools, churches, residential uses, libraries, theaters, auditoriums, and transient lodging.

Non-conforming Use • A use that was valid when brought into existence, but by subsequent regulation becomes no longer conforming. "Non-conforming use" is a generic term and includes (1) non-conforming structures (by virtue of size,

type of construction, location on land, or proximity to other structures), (2) non-conforming use of a conforming building, (3) non-conforming use of a non-conforming building, and (4) non-conforming use of land. Thus, any use lawfully existing on any piece of property that is inconsistent with a new or amended General Plan, and that in turn is a violation of a zoning ordinance amendment subsequently adopted in conformance with the General Plan, will be a non-conforming use.

Non-urban Land Use • Land use that is not urban. (See “Urban” and “Urban Land Use.”)

Northern Area • Everything north of the Urban Growth Boundary which is within the Benicia Planning Area.

Notice (of Hearing) • A legal document announcing the opportunity for the public to present their views to an official representative or board of a public agency concerning an official action pending before the agency.

Objective • A specific statement of desired future condition toward which the City or County will expend effort in the context of striving to achieve a broader goal. An objective should be achievable and, where possible, should be measurable and time-specific. The State Government Code (§65302) requires that general plans spell out the “objectives,” principles, standards, and proposals of the general plan. “The addition of 100 units of affordable housing by 1995” is an example of an objective.

Office Use • The use of land by general business offices, medical and professional offices, administrative or headquarters offices for large wholesaling or manufac-

turing operations, and research and development.

Open Space Element • One of the seven State-mandated elements of a local general plan, it contains an inventory of privately and publicly owned open-space lands, and adopted goals, policies, and implementation programs for the preservation, protection, and management of open space lands.

Open Space Land • Any parcel or area of land or water that is essentially unimproved and devoted to an open space use for the purposes of (1) the preservation of natural resources, (2) the managed production of resources, (3) outdoor recreation, or (4) public health and safety.

Ordinance • A law or regulation set forth and adopted by a governmental authority, usually a city or county.

Outdoor Activity Area • An area primarily utilized for the congregation of people; examples include patios of residences, pool areas, central recreation areas, and outdoor instructional areas of schools.

Outdoor Recreation Area • A privately or publicly owned or operated use providing facilities for outdoor recreation activities.

Para-transit • Refers to transportation services that operate vehicles, such as buses, jitneys, taxis, and vans for senior citizens, and/or mobility-impaired.

Parcel • A lot, or contiguous group of lots, in single ownership or under single control, usually considered a unit for purposes of development.

Park Land, Parkland • Land that is publicly owned or controlled for the purpose of providing parks, recreation, or open space for public use.

Parks • Open space lands whose primary purpose is recreation. (See “Open Space Land,” “Community Park,” and “Neighborhood Park.”)

Peak Hour/Peak Period • For any given roadway, a daily period during which traffic volume is highest, usually occurring in the morning and evening commute periods. Where “F” Levels of Service are encountered, the “peak hour” may stretch into a “peak period” of several hours’ duration.

Performance Standards •

Regulations that permit uses based on a particular set of standards of operation rather than on particular type of use. Performance standards provide specific criteria limiting noise, air pollution, emissions, odors, vibration, dust, dirt, glare, heat, fire hazards, wastes, traffic impacts, and visual impact of a use.

Personal Services • Services of a personal convenience nature, as opposed to products that are sold to individual consumers, as contrasted with companies. Personal services include barber and beauty shops, shoe and luggage repair, fortune tellers, photographers, laundry and cleaning services and pick-up stations, copying, repair and fitting of clothes, and similar services.

Planned Community • A large-scale development whose essential features are a definable boundary; a consistent, but not necessarily uniform, character; overall control during the development process by a single development entity; private ownership of recreation amenities; and enforcement of covenants, conditions, and restrictions by a master community association.

Planned Development (PD) • A description of a proposed unified development, consisting at a minimum of a map and adopted ordinance setting forth the regulations governing, and the location and phasing of all proposed uses and improvements to be included in the development.

Planning Area • The area directly addressed by the general plan. A city’s planning area typically encompasses the city limits and potentially annexable land within its sphere of influence.

Planning Commission • A seven member body created by the City of Benicia in compliance with California law (§65100). This law requires the assignment of the planning functions of a city or county to a planning department, planning commission, hearing officers, and/or the legislative body itself, as deemed appropriate by the legislative body.

Policy • A specific statement of principle or of guiding actions that implies clear commitment but is not mandatory. A general direction that a governmental agency sets to follow, in order to meet its goals and objectives before undertaking an action program. (See “Program.”)

Pollutant • Any introduced gas, liquid, or solid that makes a resource unfit for its normal or usual purpose.

Pollution • The presence of matter or energy whose nature, location, or quantity produces undesired environmental effects.

Pollution, Non-Point • Sources for pollution that are less definable and usually cover broad areas of land, such as agricultural land with fertilizers that are carried from the land by runoff, or automobiles.

Poverty Level • As used by the US Census, families and unrelated individuals are classified as being above or below the poverty level based on a poverty index that provides a range of income cutoffs or “poverty thresholds” varying by size of family, number of children, and age of householder. The income cutoffs are updated each year to reflect the change in the Consumer Price Index.

Preservation • As used in historic preservation, the process of sustaining the form and extent of a structure essentially as it exists. Preservation aims at halting further deterioration and providing structural stability but does not contemplate significant rebuilding. (See “Historic Preservation.”)

Preserve, *n.* • An area in which beneficial uses in their present condition are protected; for example, a nature preserve or an agricultural preserve. (See “Agricultural Preserve” and “Protect.”)

Preserve, *v.* • To keep safe from destruction or decay; to maintain or keep intact. (See “Maintain.”)

Principle • An assumption, fundamental rule, or doctrine that will guide general plan policies, proposals, standards, and implementation measures. The State Government Code (§65302) requires that general plans spell out the objectives, “principles,” standards, and proposals of the general plan. “Adjacent land uses should be compatible with one another” is an example of a principle.

Private Road/Private Street • Privately owned (and usually privately maintained) motor vehicle access that is not dedicated as a public street. Typically the owner posts a sign indicating that the street is private property and limits traffic

in some fashion. For density calculation purposes, some jurisdictions exclude private roads when establishing the total acreage of the site; however, aisles within and driveways serving private parking lots are not considered private roads.

Professional Offices • A use providing professional or consulting services in the fields of law, medicine, architecture, design, engineering, accounting, and similar professions, but not including financial institutions or real estate or insurance offices.

Program • An action, activity, or strategy carried out in response to adopted policy to achieve a specific goal or objective. Policies and programs establish the “who,” “how” and “when” for carrying out the “what” and “where” of goals and objectives.

Protect, *v.* • To maintain and preserve beneficial uses in their present condition as nearly as possible. (See “Enhance.”)

Public and Quasi-public

Facilities • Institutional, academic, governmental and community service uses, either owned publicly or operated by non-profit organizations, including private hospitals and cemeteries.

Public Services • (See “Municipal Services.”)

Pure Tone • Any sound which can be judged as audible as a single pitch or a set of single pitches by the Noise Control Officer. For the purposes of this ordinance, a pure tone shall exist if the one-third octave band sound pressure level in the band with the tone exceeds the arithmetic average of the sound pressure levels of the two contiguous one-third octave bands by 5 dB for center frequencies of 500 Hz and above and by 8 dB for

center frequencies between 160 and 400 Hz and by 15 dB for center frequencies less than or equal to 125 Hz.

Ranchette • A single dwelling unit occupied by a non-farming household on a parcel of 2.5 to 20 acres that has been subdivided from agricultural land.

Rare or Endangered Species • A species of animal or plant listed in: §670.2 or §670.5, Title 14, California Administrative Code; or Title 50, Code of Federal Regulations, §17.11 or §17.2, pursuant to the Federal Endangered Species Act designating species as rare, threatened, or endangered.

Reclamation • The reuse of resources, usually those present in solid wastes or sewage.

Recognize, *v.* • To officially (or by official action) identify or perceive a given situation.

Recreation, Passive • Type of recreation or activity that does not require the use of organized play areas.

Recycle, *v.* • The process of extraction and reuse of materials from waste products.

Redevelop, *v.* • To demolish existing buildings; or to increase the overall floor area existing on a property; or both; irrespective of whether a change occurs in land use.

Regional • Pertaining to activities or economies at a scale greater than that of a single jurisdiction, and affecting a broad geographic area.

Regional Park • A 250–1,000 acre park that focuses on activities and natural features not included in most other types of parks and often based on a specific scenic or recreational opportunity.

Regulation • A rule or order prescribed for managing government.

Rehabilitation • The repair, preservation, and/or improvement of substandard housing.

Remodeling • As used in historic preservation, making over or rebuilding all or part of an historic structure in a way that does not necessarily preserve its historical, architectural, and cultural features and character.

Research and Development (R&D)

Use • A use engaged in study, testing, design, analysis, and experimental development of products, processes, or services.

Residential • Land designated in the City or County General Plan and zoning ordinance for buildings consisting only of dwelling units. May be improved, vacant, or unimproved. (See “Dwelling Unit.”)

Residential, Multiple Family • Usually three or more dwelling units on a single site, which may be in the same or separate buildings.

Residential, Single-Family • A single dwelling unit on a building site.

Restore, *v.* • To renew, rebuild, or reconstruct to a former state.

Restrict, *v.* • To check, bound, or decrease the range, scope, or incidence of a particular condition.

Retention Basin/Retention Pond • (See “Detention Basin/Detention Pond.”)

Retrofit, *v.* • To add materials and/or devices to an existing building or system to improve its operation, safety, or efficiency. Buildings have been retrofitted to use solar energy and to strengthen their ability to withstand earthquakes, for example.

Rezoning • An amendment to the map and/or text of a zoning ordinance to effect a change in the nature, density, or intensity of uses allowed in a zoning district and/or on a designated parcel or land area.

Rideshare • A travel mode other than driving alone, such as buses, rail transit, carpools, and vanpools.

Ridgeline • A line connecting the highest points along a ridge and separating drainage basins or small-scale drainage systems from one another.

Right-of-way • A strip of land occupied or intended to be occupied by certain transportation and public use facilities, such as roadways, railroads, and utility lines.

Riparian Lands • Riparian lands are comprised of the vegetative and wildlife areas adjacent to perennial and intermittent streams. Riparian areas are delineated by the existence of plant species normally found near freshwater.

Risk • The danger or degree of hazard or potential loss.

Runoff • That portion of rain or snow that does not percolate into the ground and is discharged into streams instead.

Safety Element • One of the seven State-mandated elements of a local general plan, it contains adopted goals, policies, and implementation programs for the protection of the community from any unreasonable risks associated with seismic and geologic hazards, flooding, and wildland and urban fires. Many safety elements also incorporate a review of police needs, objectives, facilities, and services.

Scenic Highway Corridor • The area outside a highway right-of-way that is generally visible to persons traveling on the highway.

Scenic Highway/Scenic Route • A highway, road, drive, or street that, in addition to its transportation function, provides opportunities for the enjoyment of natural and man-made scenic resources and access or direct views to areas or scenes of exceptional beauty or historic or cultural interest. The aesthetic values of scenic routes often are protected and enhanced by regulations governing the development of property or the placement of outdoor advertising. Until the mid-1980s, general plans in California were required to include a Scenic Highways element.

Second Unit • A Self-contained living unit, either attached to or detached from, and in addition to, the primary residential unit on a single lot. Sometimes called “Granny Flat”.

Section 8 Rental Assistance

Program • A federal (HUD) rent-subsidy program that is one of the main sources of federal housing assistance for low-income households. The program operates by providing “housing assistance payments” to owners, developers, and public housing agencies to make up the difference between the “Fair Market Rent” of a unit (set by HUD) and the household’s contribution toward the rent, which is calculated at 30 percent of the household’s adjusted gross monthly income (GMI). “Section 8” includes programs for new construction, existing housing, and substantial or moderate housing rehabilitation.

Seismic • Caused by or subject to earthquakes or earth vibrations.

SEL (or SENEL) • Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure level for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.

Seniors • Persons age 62 and older. (See “Elderly.”)

Sensitive Receptors • Uses that are greatly affected by noise. These include schools, nursing homes, and childcare facilities.

Setback • The horizontal distance between the property line and any structure.

Shall • That which is obligatory; an unequivocal direction.

Shopping Center • A group of commercial establishments, planned, developed, owned, or managed as a unit, with common off-street parking provided on the site.

Should • Signifies a directive to be honored if at all possible; a less rigid directive than “shall,” to be honored in the absence of compelling or contravening considerations.

Sign • Any representation (written or pictorial) used to convey information, or to identify, announce, or otherwise direct attention to a business, profession, commodity, service, or entertainment, and placed on, suspended from, or in any way attached to, any structure, vehicle, or

feature of the natural or manmade landscape.

Significance • As used in historic preservation, a term ascribed to buildings, sites, objects, or districts that possess exceptional value or quality for illustrating or interpreting the cultural heritage of the community when evaluated in relation to other properties and property types within a specific historic theme, period, and geographical setting. A principal test of significance for historic property is “integrity.”

Single-family Dwelling, Attached • A dwelling unit occupied or intended for occupancy by only one household that is structurally connected with at least one other such dwelling unit. (See “Townhouse.”)

Single-family Dwelling, Detached • A dwelling unit occupied or intended for occupancy by only one household that is structurally independent from any other such dwelling unit or structure intended for residential or other use. (See “Family.”)

Site • A parcel of land used or intended for one use or a group of uses and having access to a public or an approved private street. A lot. (See “Lot.”)

Slope • Land gradient described as the vertical rise divided by the horizontal run, and expressed in percent.

Soil • The unconsolidated material on the immediate surface of the earth created by natural forces that serves as natural medium for growing land plants.

Solid Waste • Any unwanted or discarded material that is not a liquid or gas. Includes organic wastes, paper products, metals, glass, plastics, cloth, brick, rock, soil, leather, rubber, yard wastes, and wood, but does not include sewage and

hazardous materials. Organic wastes and paper products comprise about 75 percent of typical urban solid waste.

Specific Plan • A legal tool authorized by Article 8 of the Government Code (§65450 *et seq.*) for the systematic implementation of the general plan for a defined portion of a community's planning area. A specific plan must specify in detail the land uses, public and private facilities needed to support the land uses, phasing of development, standards for the conservation, development, and use of natural resources, and a program of implementation measures, including financing measures.

Sphere of Influence (sot) • The probable physical boundaries and service area of a local agency, as determined by the Local Agency Formation Commission (LAFCO) of the County.

Standards • (1) A rule or measure establishing a level of quality or quantity that must be complied with or satisfied. The State Government Code (§65302) requires that general plans spell out the objectives, principles, "standards," and proposals of the general plan. Examples of standards might include the number of acres of park land per 1,000 population that the community will attempt to acquire and improve, or the "traffic Level of Service" (LOS) that the plan hopes to attain. (2) Requirements in a zoning ordinance that govern building and development as distinguished from use restrictions—for example, site-design regulations such as lot area, height limit, frontage, landscaping, and floor area ratio.

Storm Runoff • Surplus surface water generated by rainfall that does not seep into the earth but flows overland to flowing or stagnant bodies of water.

Streets, Local • Streets that primarily provide access to properties. They also have a secondary role as locations for utilities, locations for easements, open space for light and air, and firebreaks between buildings. Through-traffic from one part of the community to another is not intended to be carried on local streets.

Streets, Major • The transportation network that includes a hierarchy of freeways, arterials, and collectors to service through traffic.

Structure • Anything constructed or erected that requires location on the ground (excluding swimming pools, fences, and walls used as fences, access drives, and walks).

Subdivision • The division of a tract of land into defined lots, either improved or unimproved, which can be separately conveyed by sale or lease, and which can be altered or developed. "Subdivision" includes a condominium project as defined in §1350 of the California Civil Code and a community apartment project as defined in §11004 of the Business and Professions Code.

Subsidize • To assist by payment of a sum of money or by the granting of terms or favors that reduce the need for monetary expenditures. Housing subsidies may take the forms of mortgage interest deductions or tax credits from federal and/or state income taxes, sale or lease at less than market value of land to be used for the construction of housing, payments to supplement a minimum affordable rent, and the like.

Substandard Housing/Units • Residential dwellings that, because of their physical condition, do not provide safe and sanitary housing.

Substantial • Considerable in importance, value, degree, or amount.

Sustainability • Community use of natural resources in a way that does not jeopardize the ability of future generations to live and prosper.

Sustainable Development • Development that maintains or enhances economic opportunity and community well-being while protecting and restoring the natural environment upon which people and economies depend. Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs. (*Source: Minnesota State Legislature.*)

Telecommuting • An arrangement in which a worker is at home or in a location other than the primary place of work, and communicates with the workplace and conducts work via wireless or telephone lines, using modems, fax machines, or other electronic devices in conjunction with computers.

Topography • Configuration of a surface, including its relief and the position of natural and man-made features.

Tourism • The business of providing services for persons traveling for pleasure, tourism contributes to the vitality of the community by providing revenue to local business. Tourism can be measured through changes in the transient occupancy tax, or restaurant sales.

Townhouse; Townhome • A one-family dwelling in a row of at least three such units in which each unit has its own front and rear access to the outside, no unit is located over another unit, and each unit is separated from any other unit

by one or more common and fire-resistant walls. Townhouses usually have separate utilities; however, in some condominium situations, common areas are serviced by utilities purchased by a homeowners association on behalf of all townhouse members of the association. (See "Condominium.")

Transit • The conveyance of persons or goods from one place to another by means of a local, public transportation system.

Transit, Public • A system of regularly-scheduled buses and/or trains available to the public on a fee-per-ride basis. Also called "Mass Transit."

Transitional Housing • Shelter provided to the homeless for an extended period, often as long as 18 months, and generally integrated with other social services and counseling programs to assist in the transition to self-sufficiency through the acquisition of a stable income and permanent housing. (See "Homeless" and "Emergency Shelter.")

Transportation Demand Management (TDM) • A strategy for reducing demand on the road system by reducing the number of vehicles using the roadways and/or increasing the number of persons per vehicle. TDM attempts to reduce the number of persons who drive alone on the roadway during the commute period and to increase the number in carpools, vanpools, buses and trains, walking, and biking. TDM can be an element of Transportation Systems Management (TSM). (See "Transportation Systems Management.")

Transportation Noise Sources • Noise from traffic on public roadways, railroad line operations, and aircraft in flight.

(Non-) Transportation Noise

Sources • Noise from industrial operations, outdoor recreation facilities, HVAC units, loading docks, *etc.*

Transportation Systems Management

(TSM) • A comprehensive strategy developed to address the problems caused by additional development, increasing trips, and a shortfall in transportation capacity. Transportation Systems Management focuses on more efficiently utilizing existing highway and transit systems rather than expanding them. TSM measures are characterized by their low cost and quick implementation time frame, such as computerized traffic signals, metered freeway ramps, and one-way streets.

Trees, Street • Trees strategically planted—usually in parkway strips, medians, or along streets—to enhance the visual quality of a street.

Trip • A one-way journey that proceeds from an origin to a destination via a single mode of transportation; the smallest unit of movement considered in transportation studies. Each trip has one “production end,” (or origin—often from home, but not always), and one “attraction end,” (destination).

Truck Route • A path of circulation required for all vehicles exceeding set weight or axle limits, a truck route follows major arterials through commercial or industrial areas and avoids sensitive areas.

Underutilized Parcel/Land • A parcel or piece of land that is not developed to its full zoning potential.

Undevelopable • Specific areas where topographic, geologic, and/or surficial soil conditions indicate a significant danger to

future occupants and a liability to the City or County are designated as “undevelopable” by the City or County.

Undue • Improper, or more than necessary.

Uniform Building Code (UBC) • A national, standard building code that sets forth minimum standards for construction.

Urban • Of, relating to, characteristic of, or constituting a city. Urban areas are generally characterized by moderate and higher density residential development (*i.e.*, three or more dwelling units per acre), commercial development, and industrial development, and the availability of public services required for that development, specifically central water and sewer, an extensive road network, public transit, and other such services (*e.g.*, safety and emergency response). Development not providing such services may be “non-urban” or “rural.” (See “Urban Land Use.”)

Urban Design • The attempt to give form, in terms of both beauty and function, to selected urban areas or to whole cities. Urban design is concerned with the location, mass, and design of various urban components and combines elements of urban planning, architecture, and landscape architecture.

Urban Growth Boundary • An officially adopted and mapped line dividing land to be developed from land to be protected for natural or rural uses. Urban growth boundaries are regulatory tools, often designated for long periods of time (20 or more years) to provide greater certainty for both development and conservation goals. (*Source: Greenbelt Alliance.*)

Urban Land Use • Residential, commercial, or industrial land use in areas where urban services are available.

Urban Limit Line • A boundary, sometimes parcel-specific, located to mark the outer limit beyond which urban development will not be allowed. It has the aim of discouraging urban sprawl by containing urban development during a specified period, and its location may be modified over time.

Urban Open Space • The absence of buildings or development, usually in well-defined volumes, within an urban environment.

Urban Service Area • (1) An area in which urban services will be provided and outside of which such services will not be extended. (2) Developed, undeveloped, or agricultural land, either incorporated or unincorporated, within the sphere of influence of a city, which is served or will be served during the first five years of an adopted capital improvement program by urban facilities, utilities, and services. The boundary around an urban service area is called the “urban service area boundary” and is to be developed in cooperation with a city and adopted by a Local Agency Formation Commission (LAFCO). (*California Government Code §56080.*)

Urban Services • Utilities (such as water, gas, electricity, and sewer) and public services (such as police, fire, schools, parks, and recreation) provided to an urbanized or urbanizing area

Urban Sprawl • Haphazard growth or outward extension of a city resulting from uncontrolled or poorly managed development.

Use • The purpose for which a lot or structure is or may be leased, occupied, maintained, arranged, designed, intended, constructed, erected, moved, altered, and/or enlarged in accordance with the City’s Zoning Ordinance and General Plan land use designations.

Use Permit • The discretionary and conditional review of an activity or function or operation on a site or in a building or facility.

Utility Corridors • Rights-of-way or easements for utility lines on either publicly or privately owned property. (See “Right-of-way” or “Easement.”)

Vacant • Lands or buildings that are not actively used for any purpose.

Variance • A departure from any provision of the zoning requirements for a specific parcel, except use, without changing the zoning ordinance or the underlying zoning of the parcel. A variance usually is granted only upon demonstration of hardship based on the peculiarity of the property in relation to other properties in the same zone district.

Very Low-income Household • A household with an annual income usually no greater than 50 percent of the area median family income adjusted by household size, as determined by a survey of incomes conducted by a city or a county, or in the absence of such a survey, based on the latest available eligibility limits established by the US Department of Housing and Urban Development (HUD) for the Section 8 housing program. (See “Area.”)

View Corridor • The line of sight—identified as to height, width, and distance—of an observer looking toward an object of significance to the community

(e.g., ridgeline, river, historic building, etc.); the route that directs the viewers attention.

Viewshed • The area within view from a defined observation point.

Volume-to-Capacity Ratio • A measure of the operating capacity of a roadway or intersection, in terms of the number of vehicles passing through, divided by the number of vehicles that theoretically could pass through when the roadway or intersection is operating at its designed capacity. Abbreviated as " V/C ." At a V/C ratio of 1.0, the roadway or intersection is operating at capacity. If the ratio is less than 1.0, the traffic facility has additional capacity. Although ratios slightly greater than 1.0 are possible, it is more likely that the peak hour will elongate into a "peak period." (See "Peak Hour" and "Level of Service.")

Warehousing Use • A use engaged in storage, wholesale, and distribution of manufactured products, supplies, and equipment, excluding bulk storage of materials that are flammable or explosive or that present hazards or conditions commonly recognized as offensive.

Watershed • The total area above a given point on a watercourse that contributes water to its flow; the entire region drained by a waterway or watercourse that drains into a lake, or reservoir.

Wetlands • Transitional areas between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water. Under a "unified" methodology now used by all federal agencies, wetlands are defined as "those areas meeting certain criteria for hydrology, vegetation, and soils."

Wildlife • Animals or plants existing in their natural habitat.

Will • That which is expected or may be expected. Expresses intent or purpose. (See "Shall" and "Should.")

Williamson Act • Known formally as the *California Land Conservation Act of 1965*, it was designed as an incentive to retain prime agricultural land and open space in agricultural use, thereby slowing its conversion to urban and suburban development. The program entails a ten-year contract between the City or County and an owner of land whereby the land is taxed on the basis of its agricultural use rather than its market value. The land becomes subject to certain enforceable restrictions, and certain conditions need to be met prior to approval of an agreement.

Woodlands • Lands covered with woods or trees.

Zoning • The division of a city or county by legislative regulations into areas, or zones, that specify allowable uses for real property and size restrictions for buildings within these areas; a program that implements policies of the General Plan.

Zoning District • A designated section of a city or county for which prescribed land use requirements and building and development standards are uniform.

Zoning Ordinance • Title 17 of the Benicia Municipal Code delineates zoning districts and establishes regulations governing the use, placement, and size of land and buildings.

PHOTO CREDITS

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APPENDIX A

COMMUNITY SURVEY

CITY OF BENICIA

GENERAL PLAN UPDATE COMMUNITY SURVEY REPORT

Final Draft, May 1996

prepared by

CDPS

COMMUNITY DESIGN & PLANNING SERVICES; LANDSCAPE ARCHITECTURE PROGRAM
UNIVERSITY OF CALIFORNIA, DAVIS

CITY OF BENICIA

GENERAL PLAN UPDATE

COMMUNITY SURVEY REPORT

ACKNOWLEDGMENTS

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EXECUTIVE SUMMARY

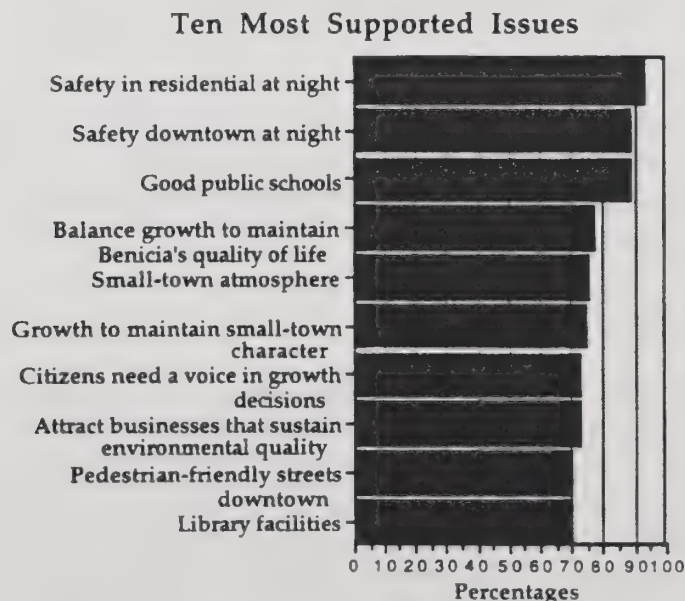
Introduction

Community Design and Planning Services (CDPS) of UC Davis has been retained by the City of Benicia to conduct the public participation process for the city's general plan update. After a series of public workshops designed to gauge public opinion on a number of issues, CDPS constructed a general opinion survey to measure the opinions of Benicia residents on issues relevant to the general plan and city development.

At the first of January, 1996, approximately 11,000 surveys were mailed to households and businesses throughout Benicia. After about three weeks, 2,970 surveys were returned for analysis. The results of the survey presented in this report represent the opinions of the respondents which, due to the high level of confidence attributed to the survey (95%, +/-2%), can accurately be extended to represent the opinions of the Benicia public at large.

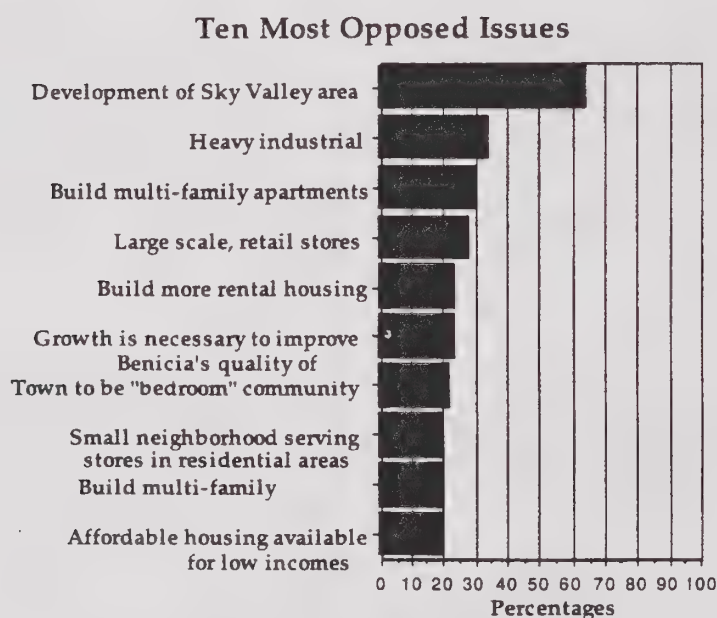
Brief Summary of Results

The following graph represents the ten issues that received the highest levels of support throughout the entire survey, determined by taking the highest percentages in the "strongly support" and "strongly agree" categories in the far left hand columns of the survey:



The two issues that stand out as the most supported issues in Benicia are feeling safe in residential areas at night (93.1%) and feeling safe in the downtown and other commercial areas at night (89.1%). Following closely is support for good public schools (88.6%). Growth issues and a concern over the community's environment are also widely agreed upon concerns.

There were also a number of issues on the survey that received high levels of opposition, measured by analyzing the responses in the "strongly oppose" or "strongly disagree" categories in the far right hand column on the survey. The following graph represents the ten most opposed issues measured on the survey:



Clearly, the issue that drew the highest level of opposition was the development of Sky Valley (64.4%). Heavy industrial (34.2%) and large scale retail stores (28.0%) as economic development options also received high opposition ratings, as did the building of more rental housing, in various forms.

Validity and Reliability in Mail Surveys

Nearly all mail surveys can be considered "scientific" in varying degrees. A number of steps can be taken, however, to increase the validity and reliability of the survey results and the applicability of those results to the general population measured. In general, there is a strong correlation between the number of base factors (or steps) included in the survey process and the level of confidence that can be attributed to the findings. The following table illustrates a number of base factors common in increasing the level of validity and reliability of mail surveys, with a comparison of what factors were included in the process of developing and administering the Benicia survey:

Creating "Scientific" Surveys

Base Qualities (Factors) in Mail Surveys	Benicia Survey
encourage high response rate	GPOC city-wide promotions of survey; survey design methods (public workshops, community input, prepaid postage on survey, optional drop box)
random sample or wide distribution	wide distribution (11,000 surveys)
sufficient response rate (10-15%)	high response rate (27%)
pretest	pretested with community volunteers
statistical validity tests	performed (level of confidence=95%, +/- 2%)

Using This Report

This report contains two main sections containing analyses of the survey results. The first section is a graphical and textual representation of the set of summary statistics derived from the survey. This summary analysis includes the unadjusted set of responses; that is, it represents how the respondents responded without any deeper analysis. The second section is based on a factor analysis method. In this section the entire survey was broken down into smaller, more general, issues that were then compared against five factors derived from the demographic section of the survey. A more complete explanation of this method can be found in the introduction to this section on page 18.

A complete set of the survey responses is included in the appendix, for further reference.

INTRODUCTION AND BACKGROUND

As part of the process of updating the Benicia General Plan, the city investigated various ways to involve the residents of Benicia in planning for the future of their city. At the outset of the process of involving the public, the General Plan Oversight Committee (GPOC) mailed an open-response questionnaire to the community to gauge, in a general way, the opinions of the public concerning issues addressed in the general plan. In response to the ideas brought forth in the questionnaire, GPOC, in conjunction with Community Design and Planning Services (CDPS) of UC Davis, conducted a series of six (6) public workshops in various neighborhoods throughout the city to further engage the public in the general plan update process. In an effort to involve the youth of the city in the process, CDPS sponsored a number of workshops and discussion sessions with each K-12 grade level at all Benicia schools. The results of the public workshops and the youth outreach activities were both submitted in written reports to the city.

The workshops and discussions generated community-based issues that have been further tested in this survey. This survey would measure both the content appropriate for a general plan as well as issues of general interest pertaining to the city's growth and development.

SURVEY METHODOLOGY

As an extension of its prior outreach efforts, CDPS began the process of designing a survey that could accurately tap the opinions of the general public on a broad range of issues. A number of steps were taken to produce a draft of the survey, including a literature review of relevant research in survey design methods, soliciting recommendations from the UC Davis statistical laboratory, and submitting ideas to UC Davis faculty with expertise in the field of survey design and administration for review.

A draft of the survey was produced by CDPS and submitted to GPOC for comments and review. From these comments a subsequent draft was prepared which was pretested by a group of approximately twenty community volunteers. These volunteers made valuable comments and suggestions on such things as graphical presentation, question wording and clarity, and survey content and comprehensibility. Their comments, together with the comments of those involved in prior activities, were considered in the creation of the final draft of the survey prepared by CDPS and submitted to the city for mailing.

At the first of January, approximately 11,000 surveys were mailed to homes and businesses throughout the city of Benicia. Respondents were asked to either mail the survey back to the city, or drop it off in a designated drop box at city hall, by January 19.

In all, 2,970 surveys were returned and collected for analysis. The responses from the survey were then manually transcribed onto scantron forms to prepare the data for computer analysis by the UC Davis statistical laboratory. At the outset, a group of volunteers from the city of Benicia transcribed approximately 700 survey forms. At the request of GPOC, the task of completing the transcribing process was assigned to CDPS in order to expedite the process. Over the period of about a month, groups of UC Davis students met in large sessions to transcribe the rest of the surveys. When all forms were completed, they were organized on a computer spreadsheet to hand over to the UC Davis statistical laboratory. The statistical laboratory performed a series of statistical analyses on the data.

The first type of statistical results that have been reported consist simply of frequency distributions and summary statistics for each of the items on the survey. A simplistic approach such as this can potentially provide misleading results, since the demographic profile of the people who respond to the questionnaire won't match the profile within the entire city exactly, and if some demographic groups are more likely to respond than others, the summary statistics can reflect this non-response bias. To adjust for the possibility of non-response bias, demographic information was obtained for the entire city, and the responses were recalculated so that the responses from a given subgroup were

weighted according to its size in the population. Thus, for example, if u_i is the mean response in the i -th subgroup, and p_i is the proportion of the population represented by these individuals, then the adjusted mean is calculated as:

$$\bar{X}_{adj} = \sum_i p_i \bar{X}_i.$$

Two adjusted sets of summary statistics were calculated, since demographic information was available for the geographic distribution of the households in the city, as well as for the age/income distribution. It wasn't possible to adjust for all of these factors simultaneously, since the demographic information on the neighborhood/age/income distribution wasn't available. For one of the age/income groups, no responses were received. (This was the group for heads of households under 25 years of age with incomes between \$38,251 and \$47,800. Since there were only 11 such households in the city, it's not too surprising that it would go unrepresented.) In calculating the summary statistics that were adjusted for the age/income distribution, this subgroup was excluded. Since that subgroup represents only 0.12% of the city's households, we don't view this as a serious shortcoming of the survey results. We want to stress that since the demographic information was by household, and since the surveys were distributed to households, the summary statistics need to be interpreted as the proportion of heads of households that have a particular opinion, rather than the analogous proportion of Benicia residents.

The fact that there were minimal discrepancies between the raw statistics and the adjusted ones gives us additional confidence that these results are representative of the City of Benicia as a whole and not just of the people who could be "bothered to respond."

In a long questionnaire such as this, it's easy to find it difficult to see the forest for all the trees. To address this problem, we ran a series of Factor Analyses on the response data, in order to identify larger patterns of opinion rather than concentrating on minutiae. The technique that was used was a Principal Components Analysis, followed by a Varimax rotation. This statistical technique develops a series of linear combinations of the responses on individual combinations of the responses on individual questions for which there's substantial observed variation within the sample. The purpose of the Varimax rotation is to choose factors that place substantial weight on comparatively small numbers of survey items, rather than placing substantial weight on all of the survey items. Several factor analyses were run, first involving all of the non-demographic survey items (with the exception of Section G, which was to be answered only by the people who answered "no" to item 81), and then involving one or two sections of questions that dealt with similar issues.

Two subsequent analyses were run on the rotated factors. First, an analysis of variance was run to determine the impact of neighborhood, age, gender, income, and home ownership on the factor in question. These analyses were what are called "Type III" analyses, which means that each factor is assessed to determine whether it provides additional (unique) predictive information, beyond what's provided by the other factors in the model. Thus for example, the neighborhood effect would be significant only if provided additional information beyond what was provided by age, gender, income and home ownership. The results are summarized in the Results section, Part 2.

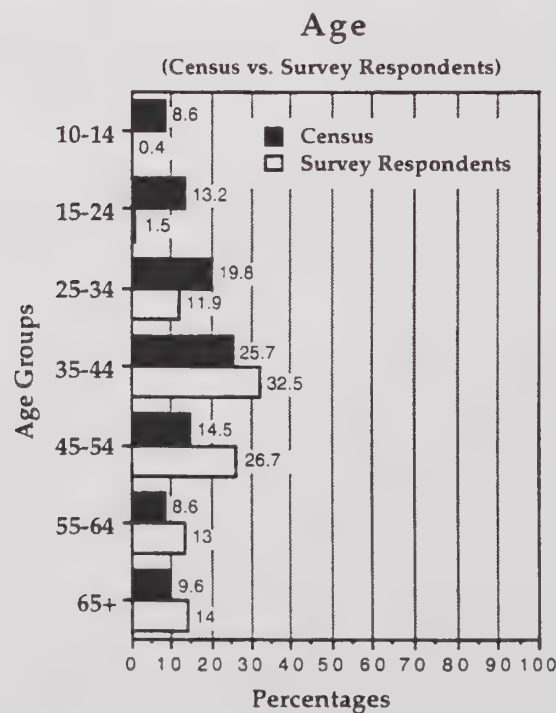
WHO RESPONDED: A DEMOGRAPHIC ANALYSIS

The following graphs represent a comparison between the demographic profile of the survey respondents and the demographic profile of the actual city population, based on three categories: age, neighborhood residence, and income level. When the results were statistically adjusted for demographic differences between the actual set of respondents and the population profile of the city, it was found that there were no statistically significant differences. For a further explanation of the demographic analysis process, see Survey Methodology section, page 5.

(1990 Census information was used for the actual city profile.)

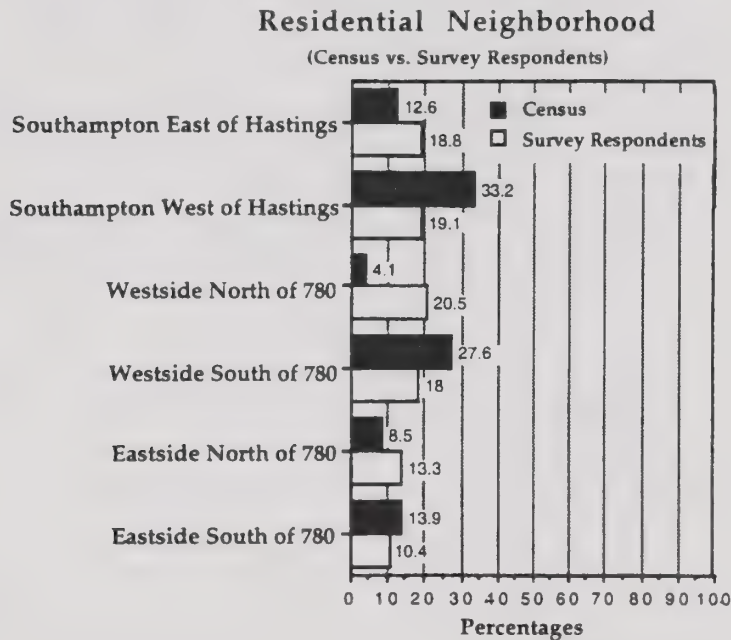
Age Groups

As might be expected, the highest response came from those between 35 and 55 years of age. Since the survey was likely completed by an adult in the household, younger people (under 25) had a lower response rate than other groups.



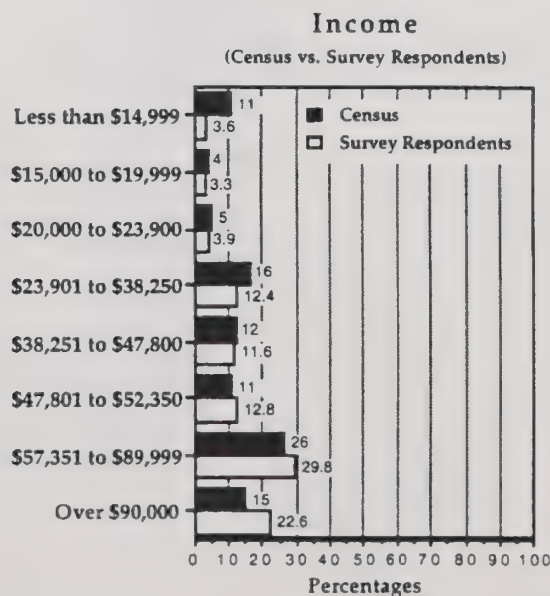
Residential Neighborhood Groups

Though the actual city population is not evenly distributed across neighborhoods, the survey response set does show a more even distribution. Eastside, north and south, of 780 had the lowest response, while the westside and Southhampton area had a slightly higher representation.



Income Groups

In general, the income of the set of survey respondents follows closely with the actual income group breakdown for the city. Clearly, the groups that had the highest response were those with incomes over \$57,351. Lower income groups had a relatively low rate of response.



RESULTS, PART 1: SUMMARY ANALYSIS

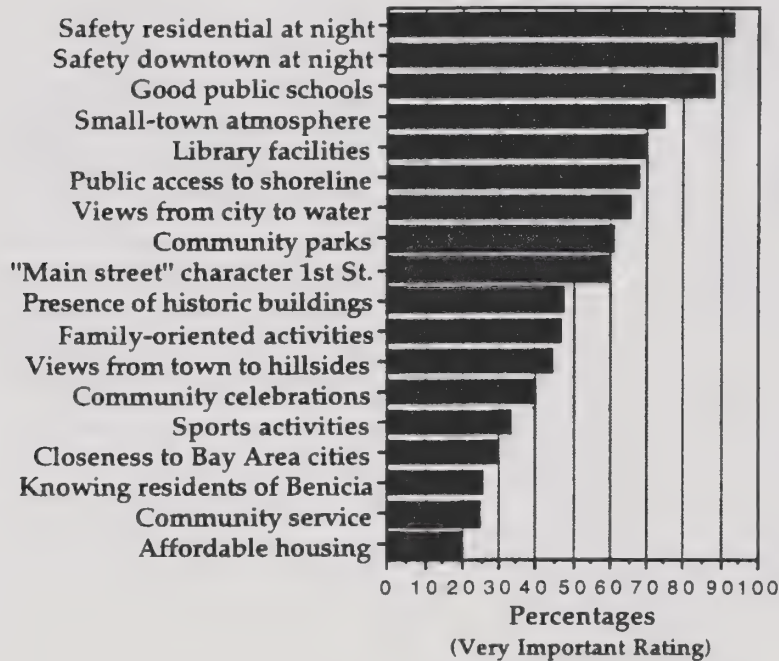
Graphical Representations

The graphs presented in this section represent the percentages of actual respondents who marked the column on the far left hand side of the survey, indicating either a “very important,” “strongly support,” “strongly agree,” or “very concerned” rating for each option. All graphs in this section consistently use this criteria, making comparisons across sections possible. These graphs are supplemented by highlights from the complete data set (see Appendix) inserted into the written commentary next to each graph. The complete data set should be consulted for further analyses.

Supplementary Analysis: Adjusting for Demographics

In conjunction with this summary analysis, an analysis was performed to adjust the responses to account for differences among demographic groups, assuring that no demographic group was over- or underrepresented in the response set. The conclusion of this analysis was that any differences between the actual response set and the set adjusted for demographics were statistically insignificant, giving greater weight to the representativeness of the actual response set.

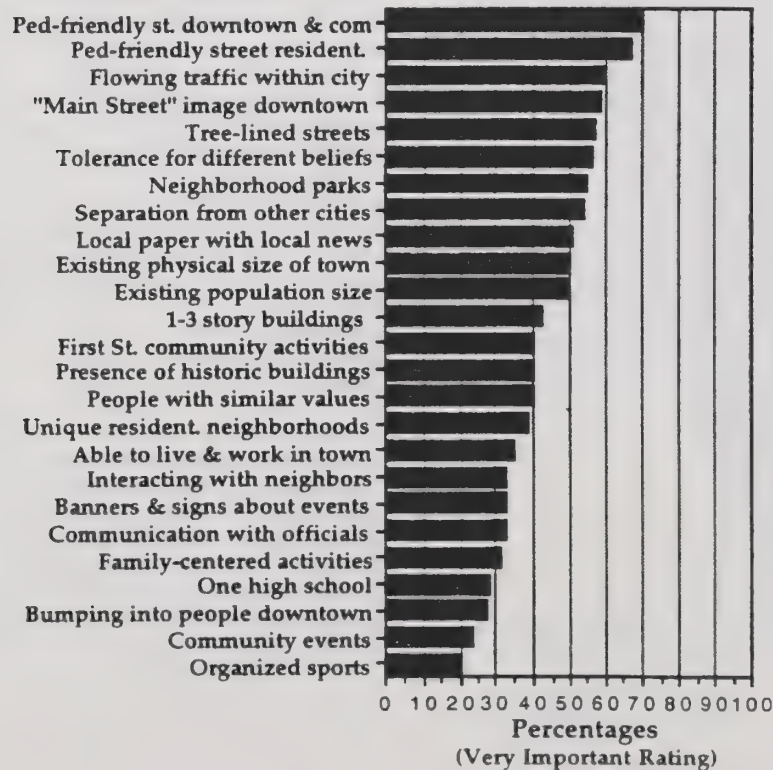
SECTION A: Factors that Contribute to the Quality of Life in Benicia



Three issues stand out as very important issues for residents of Benicia: safety in residential areas at night, safety downtown at night, and good public schools.

The quality of life factor that received the highest "not at all important" rating was the availability of affordable housing for low income residents (19.3%).

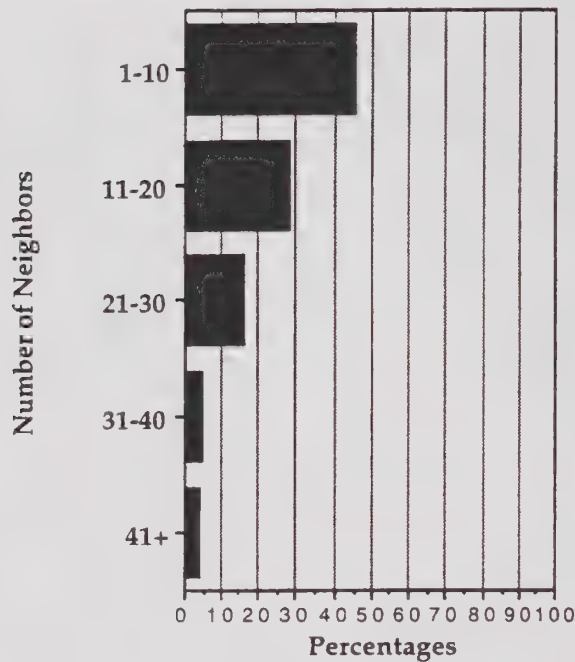
SECTION B: Factors that Contribute to the Small-Town Feel in Benicia



The two factors that were rated as the most important factors that contribute to the small-town feel in Benicia were the existence of pedestrian friendly streets in the downtown and other commercial areas, and pedestrian friendly streets in residential neighborhoods.

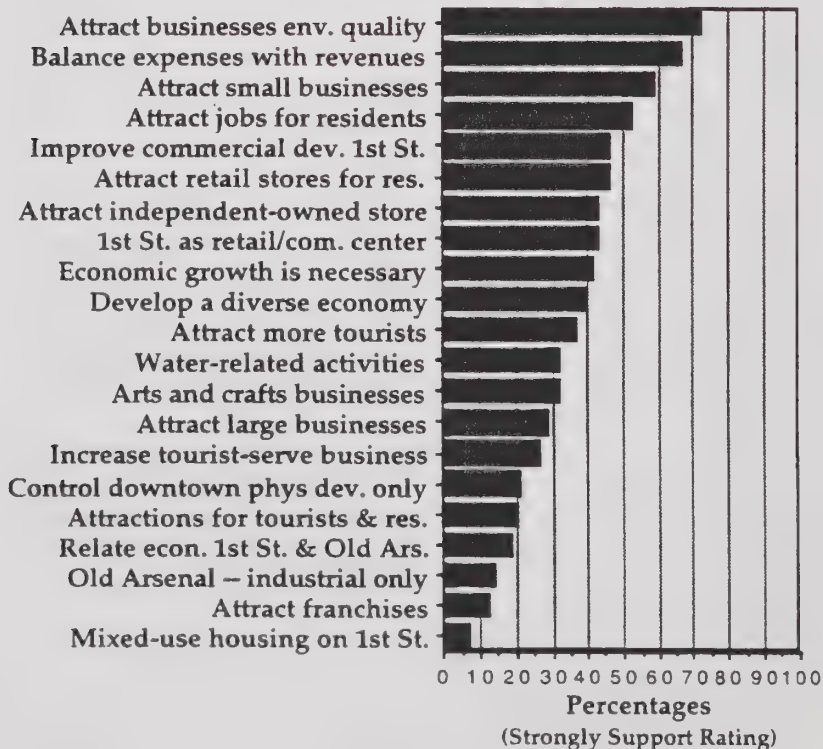
Participating in organized sports activities drew both the lowest "very important" rating and the highest "not at all important" rating.

SECTION C: How Many Neighbors Do You Know By Their First Name?



When asked how many neighbors they knew by first name, nearly half (45.9%) only knew 1-10. On the other hand, over 9% know the names of over 30 of their neighbors, with 4.4% claiming to know over 40 neighbors by first name.

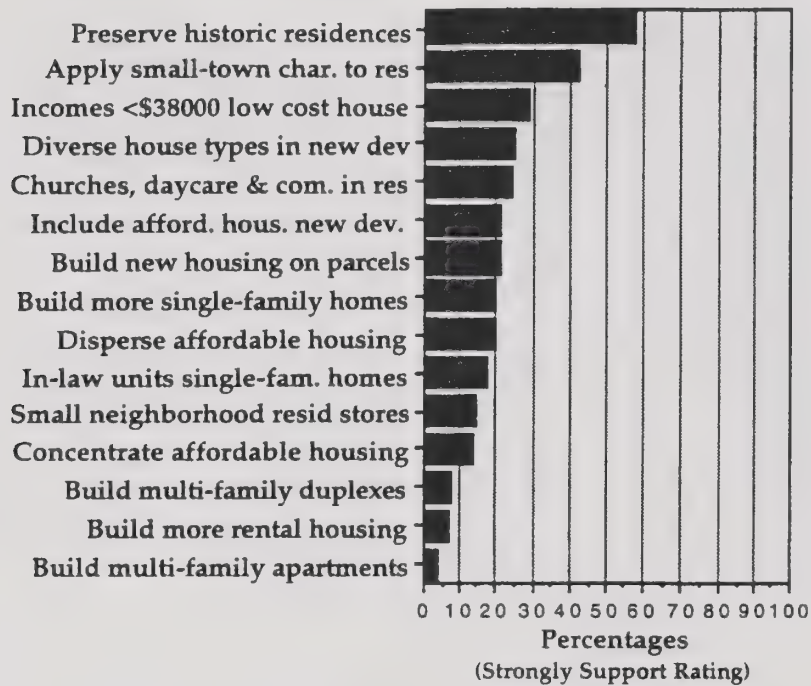
SECTION D: Economic Development Options



The economic development option that drew the highest level of support was attracting businesses that sustain environmental quality. Balancing city expenses with revenues, attracting small businesses, and attracting businesses that provide jobs for residents were also strongly supported.

Three options drew high “strongly opposed” ratings: building mixed use housing in the First Street area (19.0%), having the Old Arsenal as an industrial area only (15.6%), and attracting franchises (12.8%).

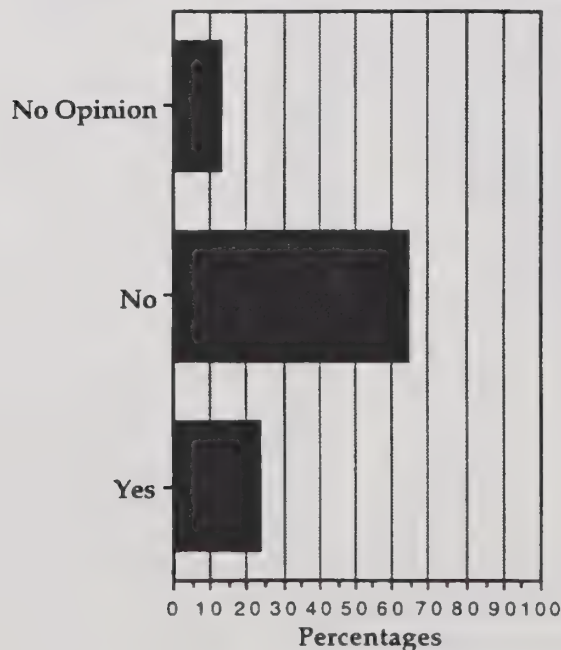
SECTION E: Residential Development Options



The residential development option that received the highest level of support was preserving historic residences. Applying small-town character factors to new residential areas was also strongly supported.

A number of options, however, drew high levels of opposition: building more multi-family housing such as apartments (30.5%), rental housing (23.9%), allowing small neighborhood stores in residential neighborhoods (19.7%), and building duplexes (19.5%).

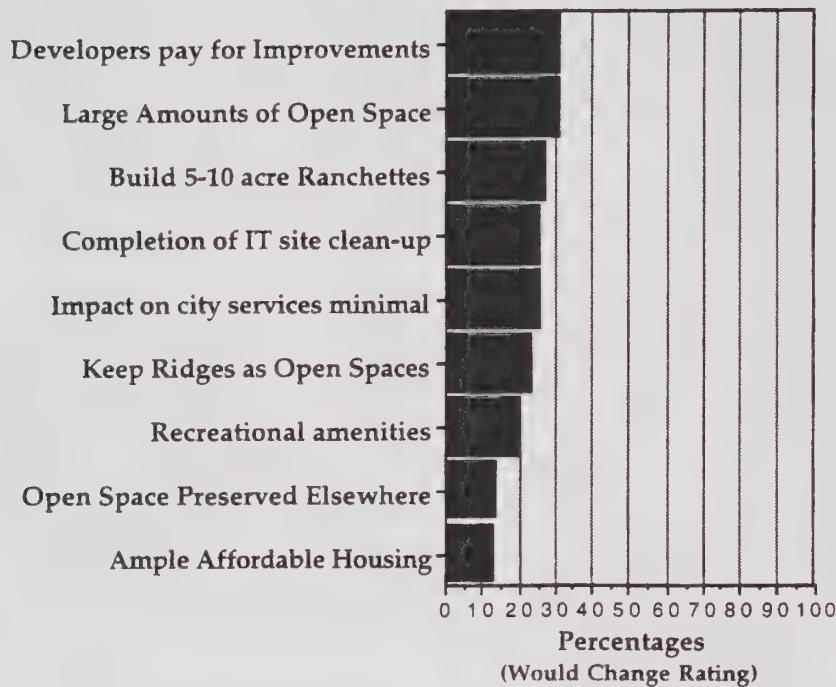
SECTION F: Do You Support Residential Development in the Sky Valley Area?



When asked if they support residential development in the SkyValley area, 64.4% responded "no," 23.0% responded "yes," and 12.5% had no opinion.

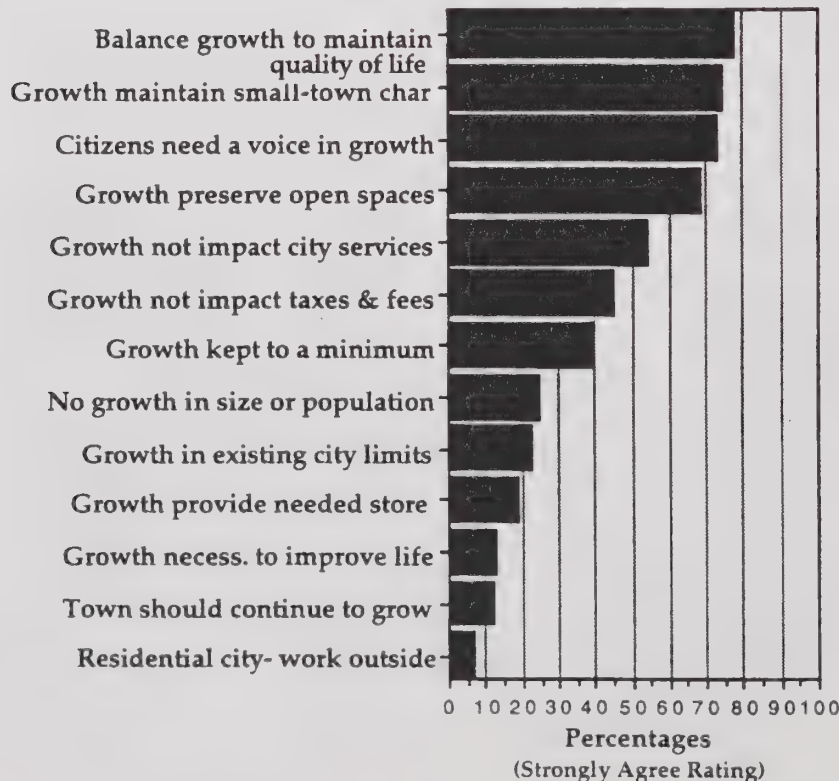
Section G of the survey is a follow-up question to Section F.

SECTION G: Would you support Sky Valley if one or more conditions were met?



Those who answered "no" to question F were asked if they would support Sky Valley development if certain conditions were met. Clearly, the majority of those respondents would not change their position with any conditions. The conditions that drew the highest level of support, however, were to have developers pay for improvements and to preserve large amounts of open space.

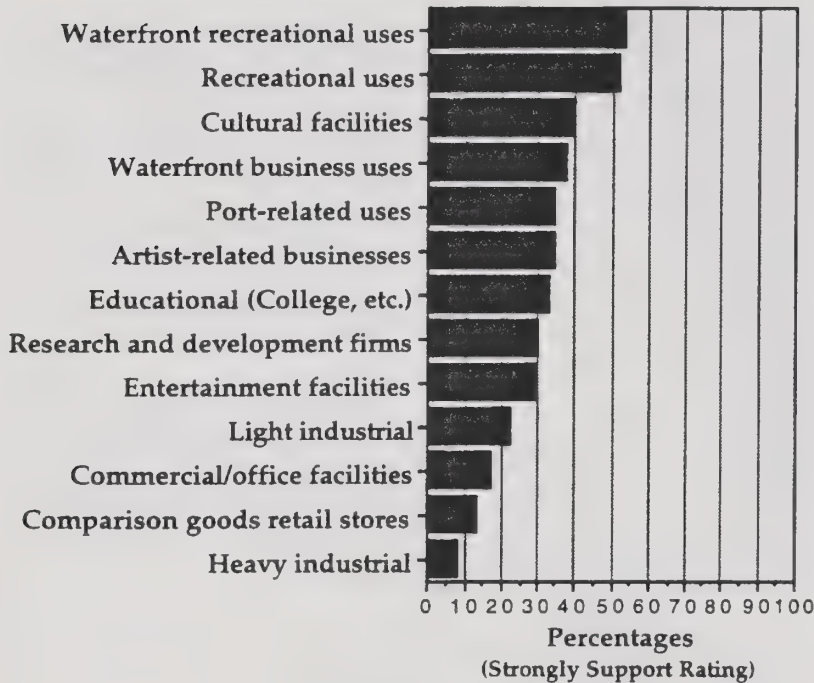
SECTION H: Growth Options



When asked to rate their level of agreement for various growth options in Benicia, four options received high "strongly agree" ratings: balancing growth to maintain quality of life, maintaining the small town character of the town, giving citizens a voice in growth decisions, and preserving open spaces.

High levels of disagreement ("strongly disagree") were noted for these statements: growth is necessary to improve Benicia's quality of life (23.4%), Benicia should be a "bedroom" community (22.3%), and the town should continue to grow (17.5%).

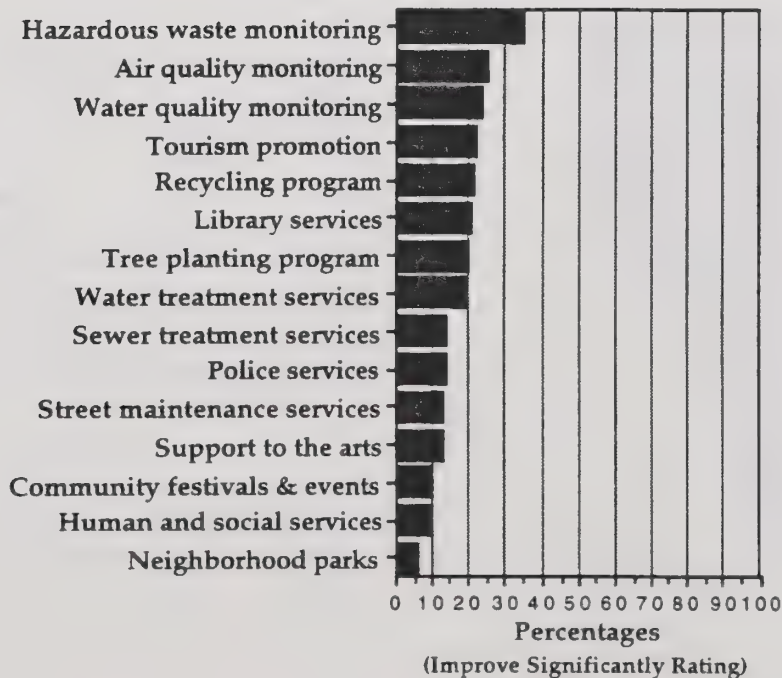
SECTION I: Facility Types



Respondents were asked to rate their level of support for types of facilities that could develop in the next 10 to 20 years. Three out of the five that received the most support were water-related facilities, with recreational and cultural facilities rounding out the five.

Two facility types received the lowest "strongly support" ratings and the highest "strongly oppose" ratings: heavy industrial and comparison goods retail stores.

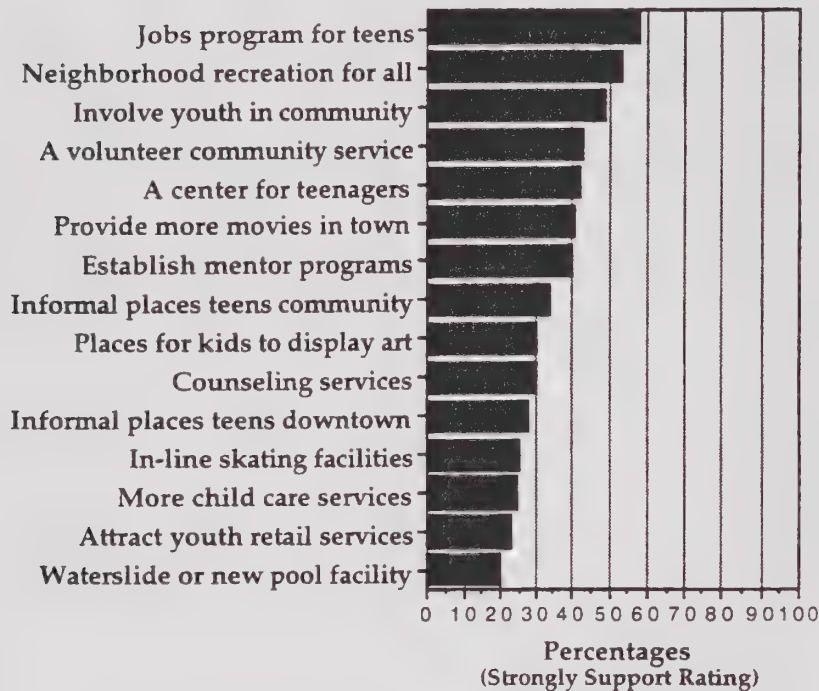
SECTION J: Services



When asked to rate which community services needed to be improved, most respondents either had no opinion or felt that the services were adequate as is. The services that need the most improvement are all environmentally concerned: hazardous waste monitoring, air quality monitoring, and water quality monitoring.

None of the services received high marks for "reduce significantly."

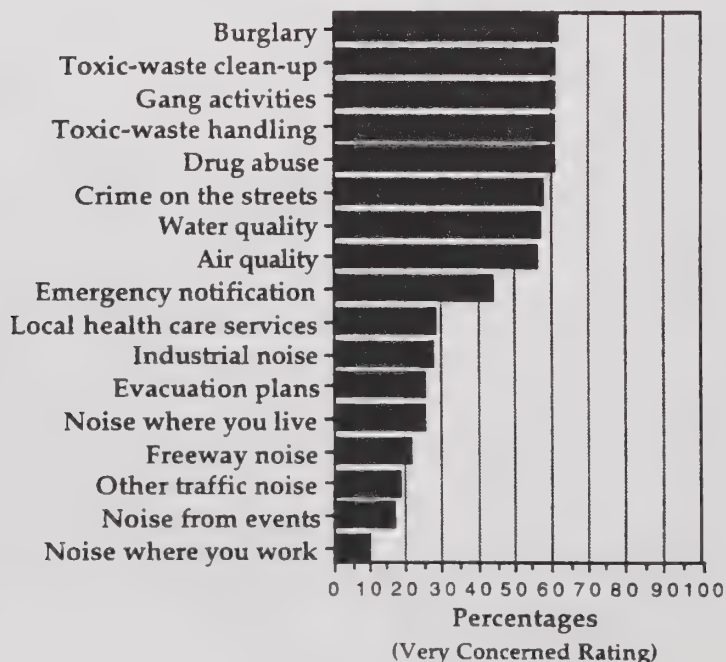
SECTION K: Services/Activities



Respondents were asked to rate their level of support for activities or services needed for Benicia's young people. Job programs for teens, neighborhood recreation programs for all ages, and involving the youth in the community, all received high "strongly support" ratings.

The option that garnered the highest "strongly oppose" rating was adding a waterslide to the city pool or developing a new facility (12.0%).

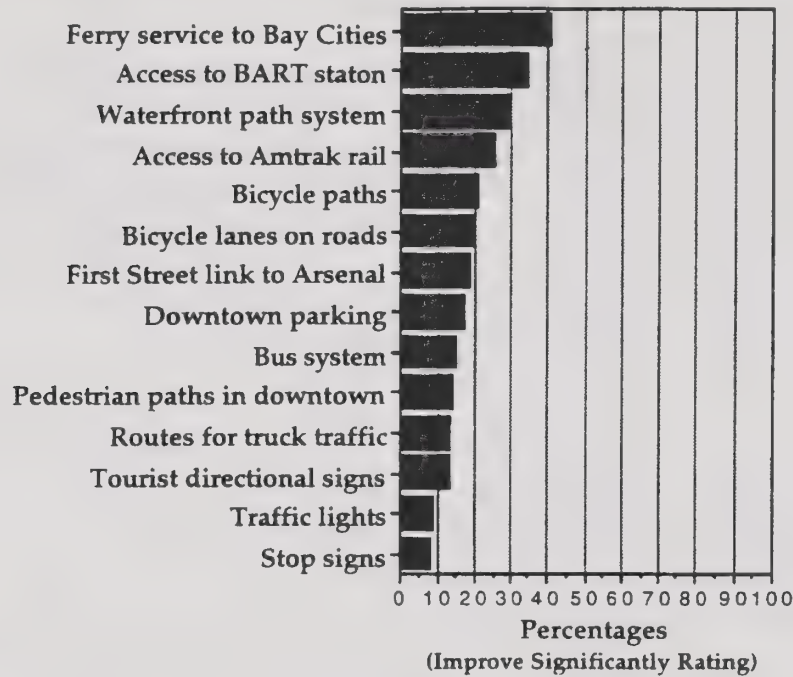
SECTION N: Health and Safety Issues



Crime and environmental issues stand out as the health and safety issues that the respondents of the survey are most concerned about. Burglary, gang activities, drug abuse, and crime on the streets, coupled with toxic waste clean-up and handling, and water and air quality, are clear concerns.

The five issues that received the lowest "very concerned" rating are all noise-related issues.

SECTION O: Transportation Facilities/Systems



Like other community services, most survey respondents either have no opinion about transportation systems and facilities, or feel that the services are adequate as is. The services that were noted as needing the most improvement are: ferry service to Bay cities, access to a BART station, a waterfront path system, and access to Amtrak rail passenger service.

RESULTS, PART 2: FACTOR ANALYSIS

The results illustrated in this section are a reflection of a set of statistical tests, generally known as factor analyses. The responses to each question on the survey were categorized into a number of general factors, which could then be used to compare how various groups of people responded to different issues addressed in the survey. For the purposes of this analysis, five factors (neighborhood, income group, age group, gender, and home ownership) were compared within twenty broad issues in the survey. Thus, for example, it is possible to see if neighborhood residence makes a difference in respondents' opinions about youth services, beyond what is explained by income, age, gender, and home ownership.

Using the Table

The following table displays the five general **factors** compared within twenty broad issues in the survey. **Comments** were written for those factors that represented a significant relationship (where **p-value** <.1000). In general, the smaller the p-value, the stronger the relationship.

In the table headings, **scale** refers to the general grouping of question areas to simplify, or generalize, the 181 survey questions into a smaller set of approximately twenty (20) questions. For example, the first four scales on the table represent how the entire survey was broken down into four main areas. The scales that follow (AB1, AB2, DE1, etc.) represent how sections on the survey were grouped together for analysis. Thus, AB1 refers to the first analysis that combined sections A and B to analyze the questions that address the concept of "small town feel." **Interpretation** simply refers to the general title given to the questions that were grouped together under one heading.

Scale	Interpretation	Factor	p-value	Comments
main 1	quality of life	neighborhood income group age group gender ownership	.3590 .0215 .0006 .0001 .3838	concern generally <i>increases</i> with income concern highest among young adults (25-54) concern higher among women
main 2	cultural diversity/ tolerance issues	neighborhood income group age group gender ownership	.0004 .0892 .0078 .0001 .0001	concern highest in south-side neighborhoods, lowest in Southampton concern greatest among low-income groups concern greatest in youngest group (<25) concern higher among women concern greater among renters
main 3	services demand	neighborhood income group age group gender ownership	.0100 .0002 .0307 .3011 .6032	concern greatest in Eastside-north concern decreases with income level concern greatest for 45-64 groups
main 4	pro economic growth	neighborhood income group age group gender ownership	.6277 .6054 .2437 .0017 .2265	women are less supportive of growth
AB1	small town feel	neighborhood income group age group gender ownership	.3966 .3038 .0007 .0001 .6666	concern is greatest among 35-64 group, lowest in <25 group concern greater among women than men
AB2	activities	neighborhood income group age group gender ownership	.2617 .4770 .0001 .0001 .1815	concern greatest among young adults (25-44), lowest among older groups (>54) concern greater among women
DE1	low cost housing	neighborhood income group age group gender ownership	.0001 .0001 .0270 .0001 .0001	concern is lowest in Southampton concern decreases with income concern (generally) increases with age concern greater among women concern greater among renters
DE2	pro small business	neighborhood income group age group gender ownership	.0024 .0149 .0117 .0001 .1279	support greatest south of I-780 support increases with income support lowest among young (<25) and old (>64) support greater among women

Scale	Interpretation	Factor	p-value	Comments
DE3	pro business (general)	neighborhood income group age group gender ownership	.1541 .6007 .0001 .0001 .0207	support increases with age support greater among men support greater among home owners
H1	growth	neighborhood income group age group gender ownership	.3119 .3893 .5425 .0161 .0029	men more supportive of growth renters more supportive of growth
H2	controlled growth	neighborhood income group age group gender ownership	.3485 .4941 .0759 .0001 .7786	youngest group (<25) has fewest concerns about growth being controlled men have fewer concerns about controlled growth
I1	industrial facilities	neighborhood income group age group gender ownership	.7975 .7769 .0002 .0001 .0156	support highest in young/old (<25,>54); lowest in 25-34 group support greater among men support greater among home owners
I2	cultural/recrea tional	neighborhood income group age group gender ownership	.0284 .1098 .0009 .0001 .0167	support greatest on west side of town (esp. south of I-780) support lowest among older residents (>54) support greater among women support greater among renters
JK1	youth services	neighborhood income group age group gender ownership	.5243 .4832 .0001 .0001 .0002	support greatest among younger groups (<35) support greater among women support greater among renters
JK2	city services	neighborhood income group age group gender ownership	.0287 .3957 .0933 .0016 .4045	concern greatest Eastside-south; lowest in Southampton concern greatest in oldest (>64) group concern greater among women
N1	noise	neighborhood income group age group gender ownership	.1998 .1330 .0043 .9630 .5499	concern greatest in 35-44 group

Scale	Interpretation	Factor	p-value	Comments
N2	environmental	neighborhood	.4381	concern greatest in lower income groups (<\$48,001)
		income group	.0004	
		age group	.5546	
		gender	.0001	
N3	crime	ownership	.3421	concern greater among women
		neighborhood	.0293	
		income group	.3345	
		age group	.0135	
O1	automotive concerns	gender	.9871	concern decreases with income
		ownership	.1036	
		neighborhood	.9937	
		income group	.0843	
O2	bicycle/pedestrian	age group	.0001	(somewhat greater among home owners)
		gender	.0110	
		ownership	.9017	
		neighborhood	.0636	
		income group	.6039	concerns lowest in Southampton
		age group	.0030	
		gender	.1482	
		ownership	.0037	
		neighborhood	.0636	concern greatest for intermediate ages (35-54)
		income group	.6039	
		age group	.0030	
		gender	.1482	
		ownership	.0037	concern greater among renters
		neighborhood	.0636	
		income group	.6039	
		age group	.0030	

APPENDIX

Appendix: Complete Survey Results (raw percents)

Appendix

Community Issues, Goals & Policies Questionnaire

Benicia General Plan Update

A. General plans can help ensure that the amenities and qualities you value remain over time. Please rate the importance of how the following factors contribute to the quality of life you enjoy in Benicia.

VERY
IMPORTANT
 MILDLY
IMPORTANT
 NO OPINION
 OF LITTLE
IMPORTANCE
 NOT AT ALL
IMPORTANT

FACTORS

1. Views from the city to the water	[65%]	[25%]	[5%]	[4%]	[1%]
2. Public access to the water's edge	[68%]	[24%]	[4%]	[3%]	[1%]
3. Good public schools	[89%]	[6%]	[4%]	[0.5%]	[0.5%]
4. Presence of historic buildings	[47%]	[39%]	[7%]	[6%]	[1%]
5. Closeness to other Bay Area cities	[29%]	[42%]	[13%]	[10%]	[6%]
6. Availability of affordable housing for incomes less than \$38,000	[20%]	[25%]	[17%]	[19%]	[19%]
7. Many family-oriented activities	[47%]	[36%]	[9%]	[6%]	[2%]
8. Small town atmosphere	[75%]	[19%]	[3%]	[2%]	[1%]
9. Feeling safe downtown at night	[89%]	[8%]	[2.5%]	[0.5%]	[0%]
10. Feeling safe in residential areas at night	[93%]	[5%]	[2%]	[0%]	[0%]
11. Opportunities for involvement in community service activities	[25%]	[50%]	[17%]	[6%]	[2%]
12. Views from the town to open hillsides	[44%]	[35%]	[11%]	[7%]	[3%]
13. Knowing many people who live in Benicia	[25%]	[47%]	[15%]	[10%]	[3%]
14. The traditional 'main street' character of First Street	[59%]	[29%]	[7%]	[3%]	[2%]
15. Opportunities for sports activities	[33%]	[36%]	[15%]	[11%]	[5%]
16. Library facilities	[69%]	[25%]	[4%]	[2%]	[0%]
17. Community parks	[61%]	[30%]	[4%]	[4%]	[1%]
18. Community celebrations	[39%]	[44%]	[9%]	[6%]	[2%]

B. In the recent public workshops many participants talked about Benicia's small town character. Assuming Benicia's small town qualities are important to you, please rate the degree of importance that the following factors contribute to the small town feel in Benicia.

FACTORS

19. Meeting people you know while doing day to day activities around town	[27%]	[42%]	[20%]	[8%]	[3%]
20. Interacting with people who live in your neighborhood	[33%]	[51%]	[8%]	[7%]	[1%]
21. Participating in community events	[24%]	[52%]	[13%]	[9%]	[2%]
22. Communication with local officials	[32%]	[44%]	[15%]	[7%]	[2%]

VERY
IMPORTANT

MILDLY
IMPORTANT

NO OPINION

OF LITTLE
IMPORTANCE

NOT AT ALL
IMPORTANT

23. Participating in organized sports	[20%]	[31%]	[22%]	[17%]	[10%]
24. Participation in family centered activities	[31%]	[38%]	[16%]	[10%]	[5%]
25. Tolerance for different beliefs	[57%]	[25%]	[12%]	[4%]	[2%]
26. Presence of banners & signs that announce community events	[33%]	[44%]	[12%]	[8%]	[3%]
27. Having a local paper that features local news	[51%]	[34%]	[8%]	[5%]	[2%]
28. Living in a community with people of similar values	[40%]	[36%]	[13%]	[7%]	[4%]
29. One high school	[27%]	[24%]	[32%]	[10%]	[7%]
30. Opportunity to live and work in town	[34%]	[30%]	[18%]	[11%]	[7%]
31. Neighborhood parks	[55%]	[34%]	[6%]	[4%]	[1%]
32. First Street community activities	[40%]	[41%]	[11%]	[6%]	[2%]
33. Easy flowing traffic within the city	[59%]	[33%]	[6%]	[2%]	[0%]
34. Presence of many historic buildings	[40%]	[39%]	[10%]	[8%]	[3%]
35. The old fashioned, main street character of downtown	[59%]	[28%]	[6%]	[4%]	[3%]
36. The physical separation from other cities	[54%]	[28%]	[10%]	[5%]	[3%]
37. Living in a community with 1-3 story buildings	[42%]	[30%]	[15%]	[8%]	[4%]
38. The existing population size of the town	[50%]	[29%]	[11%]	[7%]	[3%]
39. The existing physical size of the town	[50%]	[29%]	[11%]	[7%]	[3%]
40. Tree-lined streets	[57%]	[32%]	[6%]	[4%]	[1%]
41. Residential neighborhoods that have their own special character	[39%]	[36%]	[15%]	[7%]	[3%]
42. Pedestrian friendly streets in residential neighborhoods	[67%]	[26%]	[4%]	[2%]	[1%]
43. Pedestrian friendly streets in the downtown and other commercial areas	[70%]	[24%]	[4%]	[1%]	[1%]
C. 44. In the immediate neighborhood in which you live, how many neighbors (adults and children) do you know by their first name?					
1-10	[46%]				
11-20	[29%]				
21-30	[16%]				
31-40	[5%]				
41 +	[4%]				

D. Economic development issues were frequently discussed in the public workshops. Please indicate the level of your support for each of the following economic development options.

ECONOMIC DEVELOPMENT OPTIONS

	STRONGLY SUPPORT	MILDLY SUPPORT	NEITHER SUPPORT NOR OPPOSE	MILDLY OPPOSE	STRONGLY OPPOSE
45. Benicia should attract more tourists to the city	[37%]	[39%]	[17%]	[5%]	[2%]
46. Benicia should attract small businesses	[59%]	[32%]	[8%]	[1%]	[0%]
47. Benicia should attract large businesses	[29%]	[33%]	[16%]	[13%]	[9%]
48. The Old Arsenal should be an industrial area only	[14%]	[15%]	[37%]	[18%]	[16%]
49. Benicia should develop a diverse economy	[40%]	[33%]	[22%]	[3%]	[2%]
50. Benicia should attract businesses that provide jobs for Benicia residents	[53%]	[32%]	[12%]	[2%]	[1%]
51. The community should balance expenses with existing revenues	[67%]	[22%]	[10%]	[1%]	[0%]
52. Economic growth is necessary for Benicia	[41%]	[35%]	[16%]	[6%]	[2%]
53. Benicia should attract businesses that sustain environmental quality	[72%]	[18%]	[8%]	[1%]	[1%]
54. Benicia should develop arts and crafts related businesses	[32%]	[31%]	[29%]	[5%]	[3%]
55. Benicia should improve commercial development of First St.	[47%]	[32%]	[15%]	[4%]	[2%]
56. Benicia should develop First St. as the retail/commercial center	[43%]	[29%]	[20%]	[5%]	[3%]
57. Benicia should attract independently owned stores	[43%]	[33%]	[21%]	[2%]	[1%]
58. Benicia should attract franchises	[13%]	[24%]	[32%]	[18%]	[13%]
59. Benicia should increase tourist serving businesses	[27%]	[37%]	[26%]	[7%]	[3%]
60. Benicia should build attractions, such as museums, for tourists and Benicians	[20%]	[31%]	[31%]	[12%]	[6%]
61. Benicia should develop more water related activities	[32%]	[35%]	[25%]	[5%]	[3%]
62. Benicia should attract retail stores that serve residents	[47%]	[34%]	[14%]	[3%]	[2%]
63. Benicia should relate the economic activity between First Street and the Old Arsenal	[18%]	[28%]	[47%]	[4%]	[3%]
64. Benicia should build mixed use housing in the First Street area	[7%]	[17%]	[38%]	[19%]	[19%]
65. Benicia should control the downtown's physical development and allow the private sector to influence its business type	[21%]	[33%]	[32%]	[8%]	[6%]

E. Please rate your support of the following residential development options and issues. "Affordable housing" means that a household earning \$57,000 or less would spend less than 30% of their income to buy or rent.

RESIDENTIAL DEVELOPMENT OPTIONS

	STRONGLY SUPPORT	MILDLY SUPPORT	NEITHER SUPPORT NOR OPPOSE	MILDLY OPPOSE	STRONGLY OPPOSE
66. Ensure that young households, the elderly and others with incomes below \$38,000 have access to low cost housing	[29%]	[27%]	[20%]	[13%]	[11%]
67. Concentrate housing for incomes of \$57,000 or less in a few areas	[14%]	[25%]	[26%]	[17%]	[18%]
68. Where possible, disperse housing for incomes of \$57,000 or less in existing neighborhoods	[20%]	[26%]	[23%]	[14%]	[17%]
69. Include housing for incomes of \$57,000 or less mixed in with new housing developments	[21%]	[27%]	[20%]	[14%]	[18%]
70. Build a diversity of housing types, both single family and multi family, in new developments	[25%]	[30%]	[18%]	[13%]	[14%]
71. Preserve historic residences	[57%]	[28%]	[12%]	[2%]	[1%]
72. Encourage second rental units (in-law units) in single family homes	[18%]	[26%]	[29%]	[14%]	[13%]
73. Provide new housing by building on parcels of land within the existing city limits	[21%]	[33%]	[27%]	[9%]	[10%]
74. Allow churches, day care centers, community centers in residential neighborhoods	[24%]	[35%]	[18%]	[12%]	[11%]
75. Build more rental housing	[7%]	[16%]	[29%]	[24%]	[24%]
76. Build more single family detached houses	[20%]	[35%]	[28%]	[10%]	[7%]
77. Allow small neighborhood serving stores in residential neighborhoods	[14%]	[27%]	[20%]	[19%]	[20%]
78. Build more multi-family housing such as apartments	[4%]	[13%]	[25%]	[27%]	[31%]
79. Build more multi-family housing such as duplexes	[8%]	[26%]	[27%]	[20%]	[19%]
80. Design new residential areas to incorporate small town character factors identified as important by Benicians	[42%]	[33%]	[16%]	[4%]	[5%]

F. 81. Do you support residential development in the Sky Valley area? (Sky Valley is the mostly undeveloped area north of Southampton in and around Lake Herman Road.)

Yes	[23%]
No	[64%]
No Opinion	[13%]

G. If you answered "no" to question F, would you support residential development in the Sky Valley area if one or more of the following conditions are met? Please indicate if your position would change if one or more conditions were provided.

CONDITIONS

	WOULD CHANGE	NO OPINION	WOULD NOT CHANGE
82. Keep ridges as open spaces	[23%]	[7%]	[70%]
83. Large amounts of open space preserved	[30%]	[6%]	[64%]
84. Impact on City services minimized	[25%]	[10%]	[65%]

	WOULD CHANGE	NO OPINION	WOULD NOT CHANGE
85. Recreational amenities such as a golf course are provided	[19%]	[12%]	[69%]
86. All sewer, water, and other improvements are paid for by the development	[30%]	[8%]	[62%]
87. Comparable open space is preserved elsewhere	[14%]	[10%]	[76%]
88. Build mostly 5 or 10 acre ranchettes	[28%]	[14%]	[58%]
89. Completion of IT site clean-up	[25%]	[12%]	[63%]
90. Ample affordable housing is included	[13%]	[10%]	[77%]

H. Please rate your agreement with the following statements that refer to growth options for Benicia.

	STRONGLY AGREE	MILDLY AGREE	NEITHER AGREE NOR DISAGREE	MILDLY DISAGREE	STRONGLY DISAGREE
GROWTH OPTIONS					
91. Growth should be balanced to ensure maintaining Benicia's quality of life	[77%]	[14%]	[7%]	[1%]	[1%]
92. Growth should maintain small town character	[74%]	[16%]	[7%]	[2%]	[1%]
93. The town should not grow in size or population	[25%]	[25%]	[21%]	[19%]	[10%]
94. Growth should be kept to a minimum	[39%]	[29%]	[15%]	[11%]	[6%]
95. The town should continue to grow	[11%]	[34%]	[18%]	[19%]	[18%]
96. Growth should occur within existing city limits	[22%]	[28%]	[28%]	[12%]	[10%]
97. Growth is necessary to improve Benicia's quality of life	[13%]	[23%]	[22%]	[19%]	[23%]
98. Growth should have no impact on the amount of taxes and fees paid by Benicia residents	[45%]	[20%]	[21%]	[9%]	[5%]
99. Growth should not impact City services or schools	[54%]	[18%]	[14%]	[8%]	[6%]
100. Growth will give the city more needed stores & services	[19%]	[29%]	[24%]	[14%]	[14%]
101. Citizens need a voice in growth decisions	[73%]	[20%]	[5%]	[1%]	[1%]
102. The town should become a residential community where people live in the city but work outside the city	[7%]	[13%]	[31%]	[27%]	[22%]
103. Growth should preserve nearby open spaces	[68%]	[18%]	[9%]	[3%]	[2%]

I. While the previous question discussed approaches to growth, this question asks about the types of facilities that you would like to see in Benicia. Please rate your support of the following types of facilities that could develop in the next 10 to 20 years.

FACILITY TYPES

	STRONGLY SUPPORT	MILDLY SUPPORT	NEITHER SUPPORT NOR OPPOSE	MILDLY OPPOSE	STRONGLY OPPOSE
104. Large scale, comparison goods retail stores (stores where shoppers check several stores for best price)	[14%]	[20%]	[19%]	[19%]	[28%]

	STRONGLY SUPPORT	MILDLY SUPPORT	NEITHER SUPPORT NOR OPPOSE	MILDLY OPPOSE	STRONGLY OPPOSE
105. Entertainment facilities	[30%]	[41%]	[14%]	[8%]	[7%]
106. Cultural facilities	[40%]	[38%]	[16%]	[3%]	[3%]
107. Artist related businesses	[34%]	[34%]	[23%]	[5%]	[4%]
108. Educational (college, etc.)	[33%]	[31%]	[22%]	[8%]	[6%]
109. Commercial/Office facilities	[17%]	[42%]	[25%]	[10%]	[6%]
110. Light industrial (assembly, warehouse, etc.)	[23%]	[42%]	[22%]	[8%]	[5%]
111. Heavy industrial (manufacturing, use of raw materials, etc.)	[8%]	[18%]	[19%]	[21%]	[34%]
112. Research & development firms	[30%]	[37%]	[21%]	[7%]	[5%]
113. Waterfront business uses	[38%]	[36%]	[14%]	[6%]	[6%]
114. Port related uses	[34%]	[36%]	[19%]	[6%]	[5%]
115. Waterfront recreational uses	[53.5]	[32%]	[10.5%]	[2%]	[2%]
116. Recreational uses	[52%]	[33%]	[12%]	[2%]	[1%]

J. Please evaluate community services, and rate which services need to be improved, are adequate as is, or can be reduced.

SERVICES	IMPROVE SIGNIFICANTLY	IMPROVE SOMEWHAT	ADEQUATE AS IS/ NO OPINION	REDUCE SOMEWHAT	REDUCE SIGNIFICANTLY
117. Library services (extended hours, book volume, etc.)	[20%]	[36%]	[43%]	[1%]	[0%]
118. Street maintenance services	[13%]	[35%]	[51%]	[1%]	[0%]
119. Water treatment services	[19%]	[26%]	[54%]	[1%]	[0%]
120. Sewer treatment services	[14%]	[21%]	[64%]	[1%]	[0%]
121. Neighborhood parks	[6%]	[24%]	[65%]	[3%]	[2%]
122. Police services	[14%]	[28%]	[57%]	[1%]	[0%]
123. Air quality monitoring	[25%]	[25%]	[47%]	[2%]	[1%]
124. Human and social services	[10%]	[24%]	[60%]	[4%]	[2%]
125. Water quality monitoring	[24%]	[27%]	[48%]	[1%]	[0%]
126. Hazardous waste monitoring	[34%]	[24%]	[39%]	[2%]	[1%]
127. Recycling program	[21%]	[29%]	[49%]	[1%]	[0%]

	IMPROVE SIGNIFICANTLY	IMPROVE SOMEWHAT	ADEQUATE AS IS/ NO OPINION	REDUCE SOMEWHAT	REDUCE SIGNIFICANTLY
128. Community festivals & events	[10%]	[28%]	[59%]	[2%]	[1%]
129. Support to the arts	[13%]	[26%]	[53%]	[4%]	[4%]
130. Tree planting program	[20%]	[32%]	[45%]	[2%]	[1%]
131. Tourism promotion	[22%]	[33%]	[38%]	[4%]	[3%]

K. Because the General Plan does not address schools, what activities or services do you feel are needed for Benicia's young people? Please rate your support of the following:

SERVICES/ACTIVITIES

	STRONGLY SUPPORT	MILDLY SUPPORT	NEITHER SUPPORT NOR OPPOSE	MILDLY OPPOSE	STRONGLY OPPOSE
132. Jobs program for teens	[58%]	[27%]	[13%]	[1%]	[1%]
133. Neighborhood recreation for all ages	[53%]	[29%]	[16%]	[1%]	[1%]
134. More child care services	[25%]	[28%]	[41%]	[4%]	[2%]
135. Add a waterslide to the city pool or develop new facility	[20%]	[22%]	[34%]	[12%]	[12%]
136. A center for teenagers	[42%]	[32%]	[20%]	[4%]	[2%]
137. A volunteer community service program	[42%]	[36%]	[20%]	[1%]	[1%]
138. Attract more retail services that can also serve youth, such as music stores	[23%]	[37%]	[27%]	[8%]	[5%]
139. Maintain informal places for teens to socialize throughout the community	[34%]	[37%]	[21%]	[5%]	[3%]
140. Maintain informal places for teens to socialize downtown	[27%]	[35%]	[24%]	[9%]	[5%]
141. Involve youth in community issues	[49%]	[35%]	[14%]	[1%]	[1%]
142. Establish mentor programs (i.e. Big Brother/Big Sister)	[40%]	[35%]	[22%]	[2%]	[1%]
143. Provide more counseling services	[30%]	[32%]	[32%]	[4%]	[2%]
144. Provide in-line skating facilities	[25%]	[30%]	[30%]	[8%]	[7%]
145. Provide more movies in town	[41%]	[28%]	[23%]	[4%]	[4%]
146. Establish places for children to display art	[30%]	[33%]	[32%]	[2%]	[3%]

L. If you live in Benicia, please state the route you use to get to work, and the transportation mode used:

147. To the south on I-680 [54%]	To the north on I-680 [11%]	To west on I-780 [35%]
148. Auto (drive alone) [88%]	Carpool/vanpool [8%]	Bus [2%] Bicycle/walk [2%]

M. If you work in Benicia, please state the route you use to come to work, and transportation mode used:

149. From the south on I-680 [31%] From the north on I-680 [18%] From the west on I-780 [51%]
 150. Auto (drive alone) [87%] Carpool/vanpool [4%] Bus [1%] Bicycle [2%] Walk [6%]

N. How do you perceive the following local health and safety issues? Please indicate if issues are a concern /threat to you.

ISSUES

	VERY CONCERNED	MILDLY CONCERNED	NO OPINION	OF LITTLE CONCERN	NOT AT ALL CONCERNED
151. Air quality	[56%]	[28%]	[7%]	[6%]	[3%]
152. Water quality	[57%]	[28%]	[8%]	[5%]	[2%]
153. Toxic waste clean up	[61%]	[24%]	[9%]	[4%]	[2%]
154. Toxic waste handling	[61%]	[22%]	[10%]	[5%]	[2%]
155. Local health care services	[28%]	[35%]	[24%]	[9%]	[4%]
156. Noise from events	[17%]	[25%]	[26%]	[19%]	[13%]
157. Industrial noise	[27%]	[27%]	[21%]	[17%]	[8%]
158. Freeway noise	[22%]	[31%]	[21%]	[18%]	[8%]
159. Other traffic noise	[18%]	[32%]	[24%]	[18%]	[8%]
160. Noise where you live	[25%]	[27%]	[18%]	[18%]	[12%]
161. Noise where you work	[9%]	[15%]	[46%]	[15%]	[15%]
162. Evacuation plans	[25%]	[31%]	[28%]	[10%]	[6%]
163. Crime on the streets	[58%]	[28%]	[6%]	[6%]	[2%]
164. Drug abuse	[61%]	[26%]	[7%]	[4%]	[2%]
165. Burglary	[61%]	[28%]	[6%]	[4%]	[1%]
166. Gang activities	[61%]	[24%]	[7%]	[6%]	[2%]
167. Emergency notification	[44%]	[31%]	[16%]	[6%]	[3%]

O. Please evaluate the following transportation systems/facilities with respect to which items need improvement or need to be provided, are adequate as is, or should be reduced.

OPTIONS

	IMPROVE SIGNIFICANTLY	IMPROVE SOMEWHAT	ADEQUATE AS IS/ NO OPINION	REDUCE SOMEWHAT	REDUCE SIGNIFICANTLY
168. Bicycle paths	[21%]	[35%]	[42%]	[1%]	[1%]
169. Bicycle lanes on roads	[20%]	[34%]	[43%]	[2%]	[1%]
170. Pedestrian paths in the downtown	[14%]	[29%]	[55%]	[1%]	[1%]
171. Waterfront path system	[29%]	[35%]	[34%]	[1%]	[1%]

	IMPROVE SIGNIFICANTLY	IMPROVE SOMEWHAT	ADEQUATE AS IS/ NO OPINION	REDUCE SOMEWHAT	REDUCE SIGNIFICANTLY
172. First Street link to Arsenal	[18%]	[25%]	[53%]	[2%]	[2%]
173. Routes for truck traffic in non-industrial areas	[14%]	[23%]	[54%]	[4%]	[5%]
174. Downtown parking	[17%]	[34%]	[48%]	[1%]	[0%]
175. Access to BART station	[34%]	[25%]	[39%]	[1%]	[1%]
176. Access to Amtrak rail passenger service	[26%]	[22%]	[50%]	[1%]	[1%]
177. Ferry service to Bay Area cities	[41%]	[23%]	[33%]	[1%]	[2%]
178. Traffic lights	[9%]	[23%]	[63%]	[3%]	[2%]
179. Bus system	[15%]	[28%]	[55%]	[1%]	[1%]
180. Stop signs	[8%]	[17%]	[70%]	[3%]	[2%]
181. Tourist directional signs	[13%]	[31%]	[54%]	[1%]	[1%]

Please Provide the Following Background Information

182. Age:	a. 10-14 [0.4%]	188. Housing Type:	a. Single Family Residence [76.1%]
	b. 15-24 [1.5%]		b. Apartment [5.9%]
	c. 25-34 [11.9%]		c. Mobile Home [2.1%]
	d. 35-44 [32.5%]		d. Townhouse/Condominium [11.4%]
	e. 45-54 [26.7%]		e. Duplex [1.9%]
183.	a. 55-64 [13.0%]	189.	a. Cottage/In law Unit [2.7%]
	b. 65+ [14.0%]		
184. Residential Neighborhood:		190. Home Ownership:	
a. Eastside south of 780 [10.4%]		a. Own [85.2%]	
b. Eastside north of 780 [13.3%]		b. Rent [14.8%]	
c. Westside south of 780 [18.0%]		191. Live and work:	
d. Westside north of 780 [20.5%]		a. Live in Benicia [97.5%]	
e. Southampton east of Hastings [19.1%]		b. Work in Benicia [2.5%]	
185. a. Southampton west of Hastings [18.8%]		192. Income: Please mark the category that best matches your combined household income before taxes.	
186. Sex:			
a. Female [56.6%]			
b. Male [43.4%]			
187. Household Type:			
a. Single [16.7%]			a. Less than \$14,999 [3.6%]
b. 2 or more adults [38.6%]			b. \$15,000 to \$19,999 [3.3%]
c. Single adult with children [5.5%]			c. \$20,000 to \$23,900 [3.9%]
d. 2 or more adults with children [39.1%]			d. \$23,901 to \$38,250 [12.4%]
			e. \$38,251 to \$47,800 [11.6%]
		193.	a. \$47,801 to \$57,350 [12.8%]
			b. \$57,351 to \$89,999 [29.8%]
			c. Over \$90,000 [22.6%]

APPENDIX B

LAND USE CHANGES

This General Plan changes the land use designations of several areas and parcels of land from the designations shown on the 1993 General Plan. All of these changes are consistent with the goals, policies, and programs of this General Plan.

The land use changes are listed, numbered, and described on the following pages. The paragraph numbers correspond to the numbers on the diagram of Land Use Changes at the end of this section. All acreages are gross except as noted. "Net" means streets are completed and not included in the acreage figures.

LAND USE CHANGES TO THE 1993 GENERAL PLAN

1. The entire former ***Sky Valley*** Group site (350 acres on three parcels north of Lake Herman Road): **FROM** Low Density Residential, Medium Density Residential, and General Open Space **TO** General Open Space.
2. Three parcels (***IT—formerly Seeno***) (169 acres) north of Lake Herman Road (and north and northwest of the Water Treatment Plant): **FROM** Business and Professional Office **TO** General Open Space.
3. ***West Channel Road and California Court***: approximately 33 parcels (134 acres) **FROM** General Industrial **TO** Limited Industrial with a General Open Space buffer adjacent to proposed residential along the south and west edges of the industrial parcels. The buffer area is located between industrial properties on the west side of West Channel and adjacent residential properties. The buffer area is the land between the rear yard property lines of the residential lots in the Southampton subdivision and developed industrial land along the west side of West Channel. The buffer is an average of 200 feet in width, with variations in response to the topography.
4. ***Exxon undeveloped land west*** of East Second (five parcels; 272 acres): **FROM** General and Limited Industrial **TO** Limited Industrial with a General Open Space buffer of at least 200 feet adjacent to residential. The 1.5-acre reservoir site is to remain Public/Quasi-public.
5. ***Exxon undeveloped land east*** of East Second (one parcel of 152 acres): **FROM** General Industrial **TO** General and Limited Industrial. General Industrial will begin at a point 700 feet from Exxon's southern property line, adjacent to Low Density Residential, tapering to the open space buffer area adjacent to the

City cemetery. A General Open Space buffer will be maintained along the south edge of at least 200 feet adjacent to Low Density Residential and Public/Quasi-public. The 7.6-acre City corporation yard is to remain Public/Quasi-public.

6. **Upper Arsenal north** of I-780 (123 acres from approximately the Armory south, to and including Pine Lake): **FROM** General Industrial **TO** Limited Industrial.
7. **Four Fleetside parcels** (43.5 acres between Industrial Way and the UPRR): **FROM** General Industrial **TO** Open Space-Marsh.
8. The **third parcel north of Lake Herman Road** between Egret Court and the UPRR: (4.7 acres) **FROM** Limited Industrial **TO** Open Space-Marsh.
9. West side I-680, south of the northern “Gateway” to Benicia: a former gravel pit enclosed by forested hills, remains General Open Space but the City may redesignate the site as part of a future General Plan amendment.
10. **East side I-680**, south of the northern “Gateway” to Benicia: three parcels (24 acres) between Goodyear Road and I-680, **FROM** General Open Space **TO** Limited Industrial.

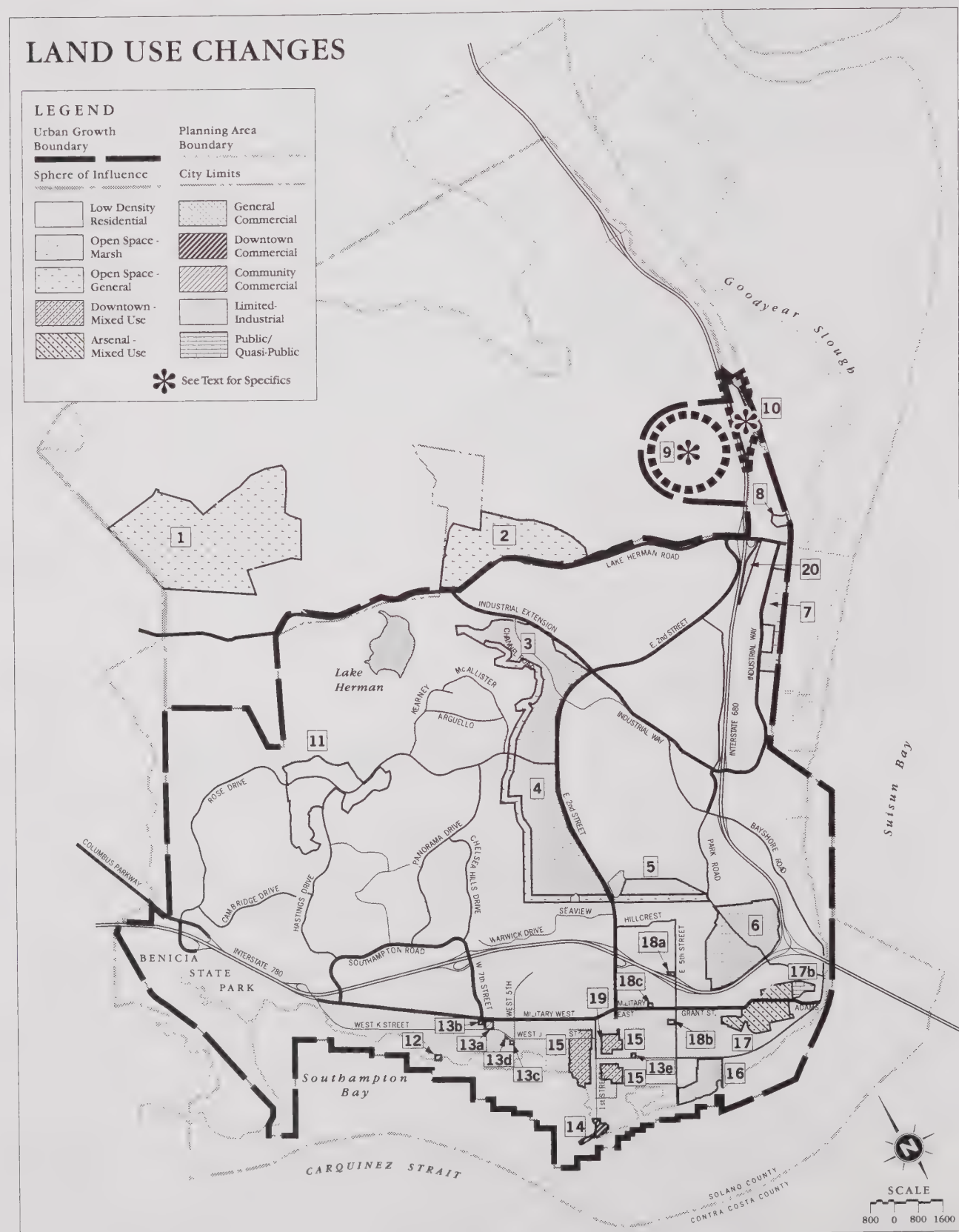
Sites 9 and 10 are marked on the Land Use Diagram with an asterisk. These sites are located on both sides of I-680 north of Lake Herman Road and south of the northern “Gateway” to Benicia. When approaching Benicia from Cordelia, most of the visible land is rural or not developed. About one mile north of Lake Herman Road, two hills form a visual transition—a gateway—to Benicia. Site 9 (acreage may vary) and Site 10 (24 acres) could accommodate urban development and would be the first such sites to be seen after passing through the gateway hills from the north.

In planning for future urban uses on these sites, the City should consider the following:

- (a) Since first impressions of a community are very important, projects at these sites should offer attractive architectural designs, screening of outdoor storage and similar outdoor activity areas, and landscaping which relates to both the development and surrounding rural environment. Existing trees should be retained to the extent feasible, and contour grading techniques should be applied to highly visible areas.
- (b) Freeway-oriented signs should be avoided. Buildings, other large structures, and extensive landscape screening on or east of I-680 should not block views of Suisun Bay. Views of flat building roofs and rooftop equipment should also be avoided
- (c) Certain environmental issues will need to be satisfactorily addressed prior to allowing development on these sites. They include the potential for seismic activity within the Alquist-Priolo Special Studies Zone and potential impacts associated with the closure of IT.
- (d) A variety of recreational or business uses may be considered for these sites. The sites should not be considered for residential development because they

are isolated from the rest of the residential community and services. The sites should also not be considered for heavy industrial activities. Those should be diverted to the Industrial Park.

- (e) Development on Site 9 must not preclude the public's ability to access adjacent open space.
11. ***Parcels generally north of Solar Village, Henderson School, and Jack London Park (and generally along Solano Drive, Rose Drive, Sorrel Court, Alder Court, Lupine Court, Toyon Place, Iris Court, Zinnia Court, Gardenia Court, Fuchsia Drive, Wisteria Court, Orchid Drive, Barton Way, Primrose Lane, Daffodil Drive, Snapdragon Place, Periwinkle Place, Morning Glory Drive, and Lyon Court):*** 120 net acres ***FROM*** Medium Density Residential ***TO*** Low Density Residential.
 Note: This change reflects the density of existing development and is only a change on the Land Use diagram. It is not a change on the ground.
 12. ***Cliff's Pleasant View*** at the south end of West Ninth Street: 0.76 acres ***FROM*** Low Density Residential ***TO*** Community Commercial.
 13. ***Several parcels*** ***TO*** Community Commercial:
 - a. Southwest corner of West Military at West Sixth: 1.54 acres ***FROM*** Neighborhood Commercial.
 - b. South of West Military adjacent to and east of Willow Glen Park: 0.47 acres ***FROM*** General Commercial.
 - c. Southwest corner of "J" and West Fifth Street: 0.36 acres ***FROM*** Neighborhood Commercial.
 - d. Parcel north side of "J" Street between West Fifth and West Sixth Streets: 0.12 acres ***FROM*** Neighborhood Commercial.
 - e. Parcel north corner of "H" and East Third Street (east of Fitzgerald Field): 0.43 acres ***FROM*** Neighborhood Commercial.
 14. ***Foot of Downtown*** (both sides of First Street south of B Street): 32 net acres ***FROM*** Waterfront Commercial and Open Space-Parks ***TO*** Downtown Commercial.
 15. The blocks on ***either side of Downtown*** from West Second (both sides) to East Second (both sides) and between "E" and "K" Streets: 29.3 net acres ***FROM*** High Density Residential, General Commercial, Neighborhood Commercial, and Business and Professional Office ***TO*** Downtown Mixed Use.
 16. The ***"Yuba" area*** (south of the WWTP and east of East Fourth Street and south of "E" Street): 32 acres ***FROM*** General Industrial ***TO*** Limited Industrial.
 - 17a. Those parts of the ***Lower Arsenal*** now designated General Industrial (north of Lincoln, Polk, and Tyler Streets), General Commercial, and Business and Professional Office (except the Commandant's House and Clocktower): 44 net acres ***TO*** Lower Arsenal Mixed Use.



- 17b. The *Commandant's House and Clocktower* (7 acres) **FROM** Business and Professional Office **TO** Public/Quasi-public.
- 18a. *Two parcels* on the *west side of East Fifth* immediately north of the I-780 on-ramp: 0.53 acres **FROM** Neighborhood Commercial **TO** General Commercial.
- 18b. *Three parcels on the south side of "L" Street* west of East Fifth plus *one parcel immediately to the south on East Fifth* between "K" and "L" Streets: 0.42 acres **FROM** Neighborhood Commercial **TO** General Commercial.
- 18c. *Two parcels on the north side of Military East* and *one parcel west of East Fourth Street*: 0.29 acres **FROM** Neighborhood Commercial **TO** General Commercial.
19. *St. Paul's Episcopal Church*: 0.29 acres, **FROM** Multifamily Residential **TO** Downtown Mixed Use.
20. 19± acres *between I-680 and RR tracks* (Fahmy): **FROM** General Commercial **TO** Limited Industrial.

Table B-1. Land Use Changes by Category and Acres, 1997

EXISTING LAND USE CATEGORY	ACRES	PROPOSED LAND USE	ACRES
1. Low Density Residential	208	Open Space	350
Medium Density Residential	12	Open Space	
Open Space	130	Open Space	
2. Business/Professional Offices	169	Open Space	169
3. General Industrial	134	Limited Industrial	114
Open Space			20
4. General Industrial	272.0	Limited Industrial	236
Open Space			36.0
5. General Industrial	29	Limited industrial	23
Open Space			6
6. General Industrial	123	Limited Industrial	123
7. General Industrial	43.5	Open Space/Marsh	43.5
8. Limited Industrial	4.7	Open Space/Marsh	4.7
10. Open Space	24	Limited Industrial	24
11. Medium Density Residential	120	Single Family Residential	120
12. Low Density Residential	.79	Community Commercial	.79

Table B-1. Land Use Changes by Category and Acres, 1997 (continued)

EXISTING LAND USE CATEGORY	ACRES	PROPOSED LAND USE	ACRES
13. a. Neighborhood Commercial	1.54	Community Commercial	1.54
b. General Commercial	.47	Community Commercial	.47
c. Neighborhood Commercial	.36	Community Commercial	.36
d. Neighborhood Commercial	.12	Community Commercial	.12
e. Neighborhood Commercial	.43	Community Commercial	.43
14. Waterfront Commercial	.5	Downtown Commercial	4.5
Open Space/Parks	4	Downtown Commercial	
15. Commercial (General, Office, Neighborhood)	2.1	Downtown Mixed Use	29.3
Public	1.2	Downtown Mixed Use	
Residential (Low Density, Medium Density, PD)	26.0	Downtown Mixed Use	
16. General Industrial	32	Limited Industrial	32
17. a. Office	11.5	Lower Arsenal Mixed Use	44.0
General Commercial	10.5	Lower Arsenal Mixed Use	
Limited Industrial	22.0	Lower Arsenal Mixed Use	
b. Business/Professional Office	7.0	Public/Semi Public	7.0
18. a. Neighborhood Commercial	.53	General Commercial	.53
b. Neighborhood Commercial	.42		.42
c. Neighborhood Commercial	.29		.29
19. General Commercial (St. Paul's Church)	.29	Downtown Mixed Use	.29
20. General Commercial (Fahmy)	19±	Limited Industrial	19±

Source: City of Benicia Planning Department, 1997

APPENDIX C

GROWTH MANAGEMENT

1. WHAT IS GROWTH MANAGEMENT?

In California, “land use planning” and “growth management” are nearly synonymous. Our state is deluged by growth and development. If we want to manage growth, we have to plan, and *vice versa*.

Here is how “Growth Management” is defined in the *California General Plan Glossary*:

“The use by a community of a wide range of techniques in combination to determine the amount, type, and rate of development desired by the community and to channel that growth into designated areas. Growth management policies can be implemented through growth rates, zoning, capital improvement programs, public facilities ordinances, urban limit lines, standards for levels of service, and other programs.”

A “Growth Management” program doesn’t have to use all of the various implementing programs listed in the above definition. In 1991, the Governor’s Office of Planning and Research (GOPR) surveyed the State’s cities and counties to determine the frequency with which those jurisdictions enacted programs to control or manage their growth. Among the more interesting findings were these:

- Growth management activity is concentrated in the more heavily populated portions of the state and relatively rare elsewhere. Overall, approximately 41 percent of the state’s population lives within a city or county with a program to control or manage growth.
- Growth management is common within the urban and urbanizing portions of the state, especially in the San Francisco Bay Area. In 1996, within the nine-county San Francisco Bay Area, 42 percent of the cities and counties had growth management programs, affecting 58 percent of the region’s population.
- Local general plans play a major part in defining growth management goals and policies.
- Cities are more likely to utilize building permit allocation systems and place annual limits on the number of permits issued than are counties. Counties are more likely to adopt urban limit lines and policies to encourage a jobs/housing balance.

- There is little correlation between the existence of formal growth management programs and recent rates of population increase.
- Few growth management programs regulate commercial growth.
- Growth management is on the increase at the local level as a result of State and regional requirements such as Congestion Management Plans.
- Many jurisdictions restrict growth in ways other than through a formal growth management program. Growth is informally restricted through high development impact fees, low residential densities, and maintaining insufficient infrastructure capacity.

2. GROWTH MANAGEMENT TECHNIQUES

Even though each city and county has its own approach to growth management, GOPR found certain techniques for regulating growth that are commonly used. The four most popular techniques among growth management cities are:

- Level of Service (LOS) standards (49 percent of all programs).
- Annual limits on the number of building permits issued (38 percent of all programs). This implies a simple granting of permits on a first-come, first-served basis until the number of permits allowed for that year have been granted.
- A system of allocating building permits (34 percent of all programs). This implies a “beauty contest,” where developments have to compete for a limited number of permits. Those developments that do the most to meet City goals, measured by a system that awards points, stand the best chance of getting permits.
- Urban limit or urban growth lines (28 percent of all programs). Urban growth boundaries are used to separate urbanizable land from rural land. The purpose of the boundaries is to contain urban growth for the period of time specified by the growth management program. The land within the boundaries—the urban growth area—is generally designated for a combination of purposes: provision of services, compact urban form, siting of future development, or protection of resource lands and environmentally sensitive areas.¹

The development of urban growth boundaries is a regional issue. Therefore, in establishing an urban growth boundary, it is important to determine the level of State and regional agency interest and involvement with local planning and development decisions. An agreement among local jurisdictions appears to be the most important step in creating successful urban growth area strategies.

When determining the initial urban growth boundary, it is important to incorporate a “market factor” into the urban growth area design. (A market factor is an amount of developable land beyond what is called for in development and population projec-

¹ This and the following four paragraphs are paraphrased from V. Gail Easley, *Staying Inside the Lines: Urban Growth Boundaries*, American Planning Association, Planning Advisory Service Report No. 440, November 1992.

tions.) A market factor can foster the success of the urban growth area by allowing flexibility in the siting of development and ensuring developers they will be able to build on locations favored by the market. This way, developers are not encouraged to look to areas outside the urban growth area to satisfy that market. In addition, an excess of developable land can have a positive effect on housing affordability by easing pressure on the price of land.

Many urban growth areas were founded on the notion that cities, not counties, should be the providers of urban services. Thus, active support for annexation of unincorporated lands within the urban growth area into the cities should be the goal of both cities and counties.

Regulatory requirements such as minimum densities, transfer of development rights, removal of public subsidies for roads, sewers, and water lines, and concurrency—allowing development only when facilities and services are available to support the development—will also help to make the urban growth boundary successful.

In addition to the four techniques listed above, 73 percent of the cities with growth management programs use their general plans to define growth management goals and policies such as *quality of life* and *jobs/housing balance*.

Growth management is often enacted in response to conditions such as road overcrowding, water shortages, and perceived loss of open space. Some people want to stop growth—to try to keep things just as they are. Others want to slow growth—to prevent too rapid a growth from overwhelming the delivery of municipal services to the community. Still, when people talk about “Growth Management,” more often than not they skip past the goals and jump right to the method, and usually they have in mind a system where some limit is placed on the number of new dwelling units.

Most cities that limit building permits under methods 2 and 3 set a cap on the *rate* of growth. Those cities either limit new development to a specific number of dwelling units per year and a specific increase in the number of square feet of commercial (and industrial) floor area per year, or they limit new development to a specific percentage increase over the dwelling units or the commercial/industrial floor area that existed in a base year. Whether the allowable increase is established in units per year, square feet per year, or in percent, the permitted annual increase is based on either specific measurement or careful estimates of the ability of the existing and projected capacity of the local infrastructure to support growth. It usually is presumed that the infrastructure capacity can be increased at some specific rate and cost.

Method 1, LOS standards, looks more directly at the delivery of specific municipal services. No set annual number of units is determined; rather, development is allowed if infrastructure capacity exists. If one or more municipal services runs out of capacity, the growth spigot is turned off.

But only methods 2 and 3 *directly* regulate the number of dwelling units that can be built.

3. ADVANTAGES AND DISADVANTAGES OF GROWTH MANAGEMENT

Growth management continues to be controversial. There is no agreement on its overall efficacy. Each growth management plan has its own particular benefits and problems. It is possible, however, to summarize briefly some of the principal positions for and against growth management.

ARGUMENTS IN FAVOR OF GROWTH MANAGEMENT

- Promotes efficient use of land by providing incentives for infill development.
- Protects farmlands, environmentally sensitive areas, scenic views, and the quality of life of a community.
- Prevents urban sprawl and the proliferation of low density residential developments.
- Results in fiscally responsible developments that can fully pay for costs of additional housing and commercial building.
- Growth management is a valid expression of local concern over development.
- Reduces traffic congestion.

ARGUMENTS AGAINST GROWTH MANAGEMENT

- Increases local housing prices, harming low and moderate income people.
- Diverts development to other localities which are often farther away from employment centers, requiring more roads and transportation facilities, resulting in longer commutes, and increasing the cost of living.
- Benefits only those who are already living in a locality, by increasing their property values through restrictive zoning.
- Increases the racial and class distinctions in American society.
- It is impossible to 'stem the tide' since the real problem is population growth, immigration, and migration which are not addressed by local growth management plans.
- Has only a limited impact on traffic congestion.

APPENDIX D

DISCUSSION OF SEAPORT PLAN

Although the Seaport Plan is not mandatory and the City is not foregoing any of its authority to designate land uses in the Seaport area, the Seaport Plan is a useful guide to coordinate port efforts in the Bay Area.

The San Francisco Bay Area Seaport Plan constitutes the maritime element of the Metropolitan Transportation Commission's (MTC's) Regional Transportation Plan and is also incorporated in the Bay Conservation and Development Commission's (BCDC's) San Francisco Bay Plan. MTC uses the Seaport Plan to assist in making project funding decisions and in managing the metropolitan transportation system. BCDC uses the Seaport Plan to help guide its regulatory decisions on permit applications, consistency determinations, and related matters.

The Seaport Plan employs land use designations and enforceable policies that local governments apply in their land use and regulatory decisions. Locations determined to be necessary for future port development are designated as "port priority use" areas. Within port priority use areas, marine terminals are identified and reserved specifically for cargo handling operations.

The Seaport Plan designates the Port of Benicia as an active, 3-berth marine terminal. It establishes the Benicia port priority use area as all the land south of I-780 and east of East Seventh Street, including lands around the Yuba complex and Wastewater Treatment Plant, and lands east of the railroad bridge and rail line near Suisun Bay.

The Seaport Plan notes that the Port of Benicia has 750 terminal acres of Neo-bulk and Dry Bulk cargo*. It also notes that, although good freeway and rail access exists, flat backland for container terminal development is insufficient.

Tidelands and submerged lands which were part of the former Arsenal were leased to Benicia Industries under agreements executed in 1965, 1966, and 1968. The leases expire in 2031 and 2032. The leases apply to tidelands and submerged lands which were part of the former Arsenal. These lands were granted to the City by the State in three parcels, conveyed by three legislative actions. Parcel B, which includes the wharf, was granted in 1964; Parcel C, which includes the land under and east of the Benicia-Martinez Bridge, was granted in 1965; and Parcel A, located west of Parcel B, was granted in 1967 (see Figure D-1).

The legislation stated that the lands were granted "...in furtherance of navigation, commerce, and fisheries..." and shall be used "...for purposes in which there is a general statewide interest..." including a harbor to accommodate and promote commerce and navigation; commercial and industrial uses; an airport and heliport; transportation facilities related to the above uses including streets, highways, railroads, pipelines, bridges, parking, electrical and telephone lines; public buildings and facilities; convention facilities; recreation, fishing, and golfing; and marinas and associated facilities.

The State retained the mineral rights and the right to use the transportation facilities and to construct highways on the lands. The legislation also reserved the public's right to fish on the submerged lands by granting rights of access over the tidelands.

The legislation provided that the City could lease the granted lands for periods up to 66 years for purposes consistent with the legislation. Accordingly, 66-year leases were executed with Benicia Industries in 1965, 1966, and 1968. The lease for Parcel A specifies that Benicia Industries will only use the premises in a manner consistent with a Master Plan for the entire port area, which plan was submitted to and approved by the City in 1965. The leases for Parcel B and C require that the property be used in a manner consistent with the legislative grant.

The requirement for a master plan for the Port area was contained in a 1965 Master Lease under which the City leased the entire Arsenal port area to Benicia Industries. In accord with the terms of the lease, a master plan for development of the Port area was submitted to and approved by the City on March 12, 1965. (Recent efforts to find a copy of that plan have not been successful.) In 1975, the City and Benicia Industries executed an Exchange Agreement whereby Benicia Industries acquired the upland Port areas in fee. In exchange, the City received waterfront property west of the Arsenal for construction of the marina. Although, the focus of the 1975 Exchange Agreement was the transfer of land, it also terminated the 1965 Master Lease.¹

The pages following Figure D-1 contain excerpts from the most recent, 1997, Seaport Plan that pertain to Benicia.

¹ City of Benicia Planning Department.

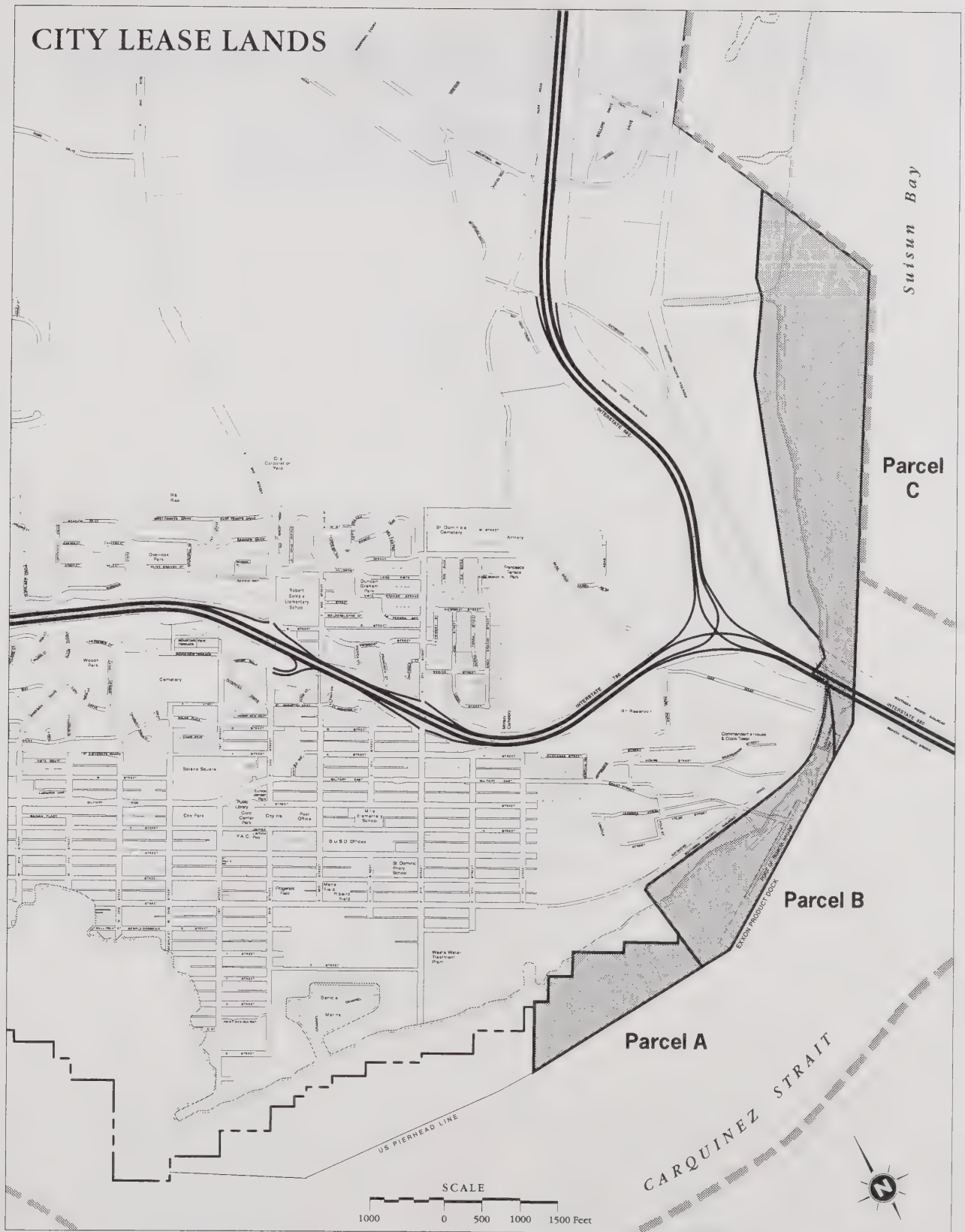


Figure D-1. State Lands parcels A, B, and C, granted to Benicia 1964-1967

SAN FRANCISCO BAY AREA SEAPORT PLAN

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION
and the
METROPOLITAN TRANSPORTATION COMMISSION

April 18, 1996

as amended
September 18, 1997

Prepared by the
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and
the staffs of the
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and the
Metropolitan Transportation Commission

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INTRODUCTION

The San Francisco Bay Area Seaport Plan is the product of a cooperative planning effort of the Metropolitan Transportation Commission (MTC) and the San Francisco Bay Conservation and Development Commission (BCDC). The Seaport Plan constitutes the maritime element of MTC's Regional Transportation Plan, and is incorporated into BCDC's San Francisco Bay Plan, where it is the basis of the Bay Plan port policies. The MTC uses the Seaport Plan to assist in making project funding decisions and managing the metropolitan transportation system, and BCDC uses the Seaport Plan to help guide its regulatory decisions on permit applications, consistency determinations, and related matters.

The Seaport Plan promotes the following goals:

1. Ensure the continuation of the San Francisco Bay port system as a major world port and contributor to the economic vitality of the San Francisco Bay region;
2. Maintain or improve the environmental quality of San Francisco Bay and its environs;
3. Provide for the efficient use of finite physical and fiscal resources consumed in developing and operating marine terminals through the year 2020;
4. Provide for integrated and improved surface transportation facilities between San Francisco Bay ports and terminals and other regional transportation systems; and
5. Reserve sufficient shoreline areas to accommodate future growth in maritime cargo, thereby minimizing the need for new Bay fill for port development.

To achieve these goals, the Seaport Plan employs land use designations and enforceable policies that MTC and BCDC use in their funding and regulatory decisions, and that local governments use in their land use and regulatory decisions. Areas determined to be necessary for future port development are designated as *port priority use areas* and are reserved for port-related and other uses that will not impede development of the sites for port purposes. Within port priority use areas, *marine terminals* are identified and are reserved specifically for cargo handling operations. The number of marine terminals (measured by marine terminal berths and amount of land needed for marine terminal use) is derived from an analysis of the Bay Area waterborne cargo demand in 2020 and the capability of existing marine terminals to handle the forecast cargo.¹

The Seaport Planning Advisory Committee (SPAC) oversaw the development of the original plan in 1982 and its subsequent updates in 1988 and 1995. The SPAC is composed

1. Terms are defined in the Glossary in Part III.

Introduction

of representatives from BCDC, MTC, the Association of Bay Area Governments, the federal Maritime Administration, the six Bay Area ports, Caltrans, and Save San Francisco Bay Association. Because the analyses were conducted over the course of 1994, recent developments, such as the merger of the Union Pacific and Southern Pacific railroads and the closure of the Oakland Army Base are not analyzed.

In developing the land use designations and policies contained in this plan, the SPAC reviewed a series of reports, developed by BCDC staff and MTC's consultants, which considered changes in the maritime industry and military base closures.² The reports provided information to assist the Seaport Planning Advisory Committee in achieving the following objectives:

1. Determine the projected growth in waterborne cargo for the San Francisco Bay Area by the year 2020 and the factors affecting this growth;
2. Determine the capability of existing Bay Area marine terminals to handle container and bulk cargoes, and the factors that will affect future changes in marine terminal capability;
3. Determine the potential for closing military bases to be converted to future use as civilian seaports;
4. Determine the number and location of new marine terminals that will be required to handle the projected growth in waterborne cargo;
5. Determine where the new marine terminals can be developed with the fewest adverse environmental impacts;
6. Determine the amount of shoreline acreage that should be reserved for marine terminal development; and
7. Determine the improvements necessary to navigation channels, roads, and railroad lines to facilitate marine terminal development and ground transportation of cargo.

APPROACH TO UPDATING THE SEAPORT PLAN

The need for additional port facilities was determined by estimating the current civilian waterborne cargo handling capability of existing ports and deducting that total cargo volume from the estimated waterborne cargo volumes in the year 2020. The remaining volume of cargo represents an incremental demand for port facilities in the Bay Area.

There are two ways to accommodate growth in waterborne cargo: (1) by constructing new marine terminals—generally requiring at least some Bay fill and dredging—or (2) by increasing the rate and volume of cargo moved through existing marine terminals with investments in capital or labor. This update of the Seaport Plan follows the trends of the maritime industry and focuses more on the latter strategy. Since 1988, when the Seaport Plan was last updated, the volume of cargo coming through the Bay has increased as predicted in the cargo forecast. At the same time, the number of ship calls has declined and only one new container terminal has been built, although the Seaport Plan predicted that six additional container terminals would be needed to handle the cargo growth. Clearly, productivity gains have been achieved by improving the efficiency of existing facilities, and this

2. Supporting technical documents are listed in Part III.

approach is more cost effective and timely for the maritime industry than building new, capital intensive facilities.

In reviewing the port priority use areas and marine terminal designations, industry trends and requirements for different types of cargo were used as guidelines for determining which port priority use and marine terminal sites are suitable or necessary for development. Such trends include:

- The increasing size of container vessels (the newest generation of container ships is up to 1,300 feet in length and 150 feet wide, with drafts of 45 to 48 feet);
- The need for deeper and wider channels and berths to accommodate these larger ships;
- The increasing use of containers for break bulk, neo-bulk, and liquid cargoes—some automobiles are now shipped in containers;
- The different economic conditions and planned developments at each Bay Area port, closing military base, and port priority use area;
- The shippers' trend toward consolidation of terminals and the high cost of container terminal development;
- The increasing importance of intermodal transportation of cargo, and;
- The importance of access to at least one, and preferably two or three, rail lines for intermodal shipping.

MARINE TERMINAL CAPABILITY ANALYSIS

Determining a marine terminal's capability requires measuring the maximum amount of cargo that can be processed at six transfer points, or constraints, where cargo is moved from one area of the terminal to another and where terminal operations can become congested. The constraint points include: ship size and frequency; ship to apron transfer; apron to storage transfer; storage to inland transfer; storage capability; and gate processing. The constraint points were modeled at each terminal in the Bay Area to determine the maximum amount of cargo that could be processed. Because a terminal's cargo throughput is only as high as the maximum amount that can be processed at the most constricting point, the volume of cargo at that point reveals the total capability of the terminal.

This approach to calculating throughput capability blends theoretical and real capability, and therein lies a key difference from the approach used in the 1988 update of the Seaport Plan. While this method accounts for normal operating procedures and management practices that are expected to continue over time, other variables that can change over time have been increased to represent a theoretical cargo handling potential. Factors such as ship calls per year, processing cycle, and throughput density were deliberately increased above historical levels to represent the productivity that could be achieved at a berth.

Terminal capability calculations were performed for each Bay Area berth, and totaled according to cargo type to determine the capability of the individual ports for each cargo type. This total capability was divided by each port's actual number of berths of each cargo type to develop a theoretical berth capability for the various cargo types. Similarly, the terminal acreage required for each type of berth was averaged for West Coast ports to estimate the terminal area needed for each type of cargo berth.

Introduction

Once each port's theoretical throughput capability for each cargo type was known, a spreadsheet program was developed to calculate the total cargo volume that could be handled at each port, given various numbers of berths. Using this spreadsheet, future berths were added to or subtracted from the various ports and military bases until the total Bay Area cargo throughput capability approximated the level of cargo forecast for the year 2020.

At the same time, potential marine terminal sites were evaluated for their suitability for marine terminal development. Those sites that did not offer adequate backland, rail and road access, deep water channels, and proximity to an existing port were eliminated, to the greatest extent possible, while still achieving adequate throughput capability to meet the 2020 cargo forecast. Large portions of military bases and port priority use areas were deleted from the Plan because they were economically or geographically unsuitable for port development.

The sites designated in the Seaport Plan will provide adequate throughput capability for the region to meet the volume of cargo forecast for the year 2020, given the constraints under which this Plan was developed. Those constraints include the high costs of developing marine terminals, local governments' land use plans, and the need to minimize filling the Bay for marine terminal development.

Designations

PORT OF BENICIA

The Benicia Port and Terminal Company operates a 3-berth marine terminal on Carquinez Strait, west of the Benicia–Martinez Bridge. The Port imports automobiles and petrocoke at its three berths, and has approximately 750 acres of open storage area. The terminal serves the Exxon refinery as well.

Findings

1. Much of the Port's property consists of upland hills, and although there is good freeway and rail access, there is insufficient flat backland for container terminal development.
2. The Port has sufficient acreage for bulk cargo operations and storage, and has recently proposed developing additional petrocoke storage facilities.
3. The Port's facilities and operations as of 1994 are shown in Table 8.

Policies

1. By the year 2020, the Port of Benicia should have the facilities and annual cargo throughput capabilities shown in Table 9.

2. The Port is designated as an active, 3-berth marine terminal. Figure 3 depicts the Benicia port priority use area.

Table 8: Port of Benicia Current Facilities

	AUTO TERMINAL (Berths 1,2,3)	PETROCOKE (Berth 3)
Terminal Operator	Benicia Port Terminal Co.	Benicia Port Terminal Co.
Cargoes Handled	GM, Ford, Chrysler, Mazda, Toyota automobiles	petrocoke
Total Terminal Area (acres)	750	250*
Length of Berths (feet)	2400	800
Wharf Area (acres)	5.5	5.5
Open Storage Area (acres)	750	N/A
Depth of Water (ft. MLLW)	38	38
Transit Shed Area (acres)	N/A	N/A
Ship Calls in 1993	215	11
Special Equipment/Facilities	vehicle ramps	conveyor 2 storage silos

* Included within auto terminal acreage.

Table 9: Port of Benicia Future Facilities

TERMINAL	DESIGNATION	TERMINAL ACRES	CARGO TYPE	EFFECTIVE NO. OF BERTHS	EXPECTED THROUGHPUT CAPABILITY*	TOTAL THROUGHPUT
Berths 1-3	Active	500	Neo-bulk	2.5	374,000	935,000
		250	Dry bulk	0.5	600,000	300,000
Totals		750		3.0		

* Denotes optimal annual throughput capability, in metric tons.

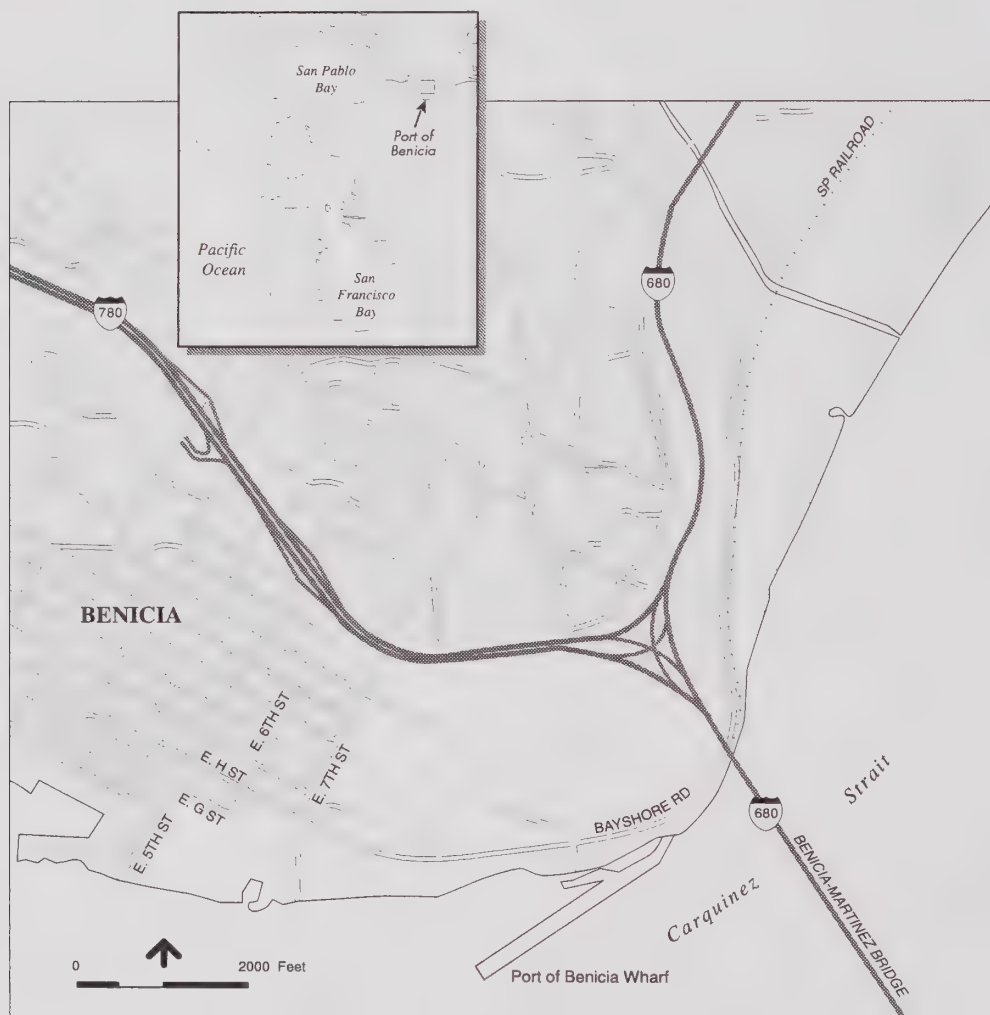


Figure 3: Port of Benicia Port Priority Use Area

- The Seaport Planning Advisory Committee should develop and implement the ongoing cargo monitoring process described in Part I and above in the section titled “Need for Further Studies”. The Committee should also review requests for interim use permits within port priority use areas, changes in use, or deletions of marine terminals or port priority use areas from the Seaport Plan. The Committee should forward its recommendations on such requests to BCDC and MTC.
- Mitigation policy for port development should be coordinated among the responsible federal, state and local agencies.
- The policies of the Comprehensive Management Plan for dredging, which will be developed by the joint agency Long Term Management Strategy, should be implemented by agencies with jurisdiction over dredging in San Francisco Bay, including the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the San Francisco Bay Regional Water Quality Control Board, and BCDC.
- The significant forecast increase in road and rail traffic generated by regional seaports suggests that projects to improve traffic flows should be formally considered in the development of local and regional capital improvement programs. These analyses should consider not only the potential for reducing congestion for overall traffic flows but specifically for freight movements.
- Local and regional government agencies can respond to changes in seaport access conditions if they have current data. Although annual changes may not necessarily indicate a continuing trend, seaport traffic should be monitored on an annual basis as is done with traffic for other modes. MTC should take the lead in compiling seaport traffic data, with the assistance of ports, railroads, and trucking companies.

PRIORITY USE BOUNDARIES

Benicia

1. Benicia Waterfront

East Boundary: Southwest line of the Benicia-Martinez Bridge (Interstate 680).

North Boundary: Southwest line of the Benicia-Martinez Bridge (Interstate 680) westerly along 680 to Interstate 780 to intersection with East 7th Street extended; hence southwest to intersection with East H Street; hence northwesterly to intersection with East 6th Street; hence southwesterly to intersection with East G Street; hence northwesterly to East 5th Street.

West Boundary: Southerly extension of the west side of East 5th Street to the shoreline.

2. Benicia Industries

South Boundary: Northeast line of Benicia-Martinez Bridge (Interstate 680).

North Boundary: South line of Southern Pacific Railroad right-of-way south of Bayshore Road to intersection with Benicia City Limit as of April 1996.

Northeast Boundary: Northeasterly line of Solano County Assessor’s Parcel No. 78-24-1 (Benicia City Limit as of April 1996).

GLOSSARY

Active Terminal Sites means those existing marine terminal facilities that are currently, and are expected to remain active for the foreseeable future.

Bay Area Ports means Encinal Terminals and the ports of Benicia, Oakland, Redwood City, Richmond, and San Francisco.

Break Bulk Cargo means cargo handled in individually packaged units.

Capacity Estimates or **Region's Capacity** means the estimated cumulative capacity of the Bay Area's marine terminals existing as of the date of this plan.

Cargo Forecast means projected flow of waterborne cargo through Bay Area ports (measured in metric tons).

Containerized Cargo means general cargo packed in standard size weather tight boxes. Standard container length is twenty feet and height is either nine or nine and one-half feet. Containers are commonly called TEUs, shorthand for twenty-foot equivalent units. Cargo remains in container from origin to destination.

Demand Estimates means projected need for future marine terminal development (measured as a number of berths).

Drayage means transportation of containers by truck between a container yard and other site, such as a rail yard.

Dry Bulk Cargo means cargo loaded or unloaded in conveyor belts, spouts or scoops, and not placed individually; flowing cargoes; rice, grain, various ores, etc.; stored loose.

Dry Cargo means all break bulk, containerized, neo-bulk, and dry bulk cargoes.

Fill means earth or any other substance or material, including pilings or structures placed on pilings, and structures floating at some or all times and moored for extended periods, such as houseboats and floating docks (Government Code Section 66632(a)).

Future Marine Terminal means those berths that are expected to be developed by the year 2020 to meet forecast growth in waterborne cargo.

Intermodal Transportation means the convenient, rapid, efficient, and safe transfer of people or goods from one mode to another during a single journey to provide the highest quality and most comprehensive transportation service for its cost.

Liquid Bulk Cargo means liquid cargo, such as petroleum or vegetable oil, that is shipped in tanks rather than small individual units.

Marine Terminal Berth means a wharf and other marine terminal facilities necessary to support a single ship berth.

Marine Terminal Capacity means the maximum capability of a marine terminal to handle cargo measured in metric tons per year.

Marine Terminal means any public, private, proprietary or military waterfront facility utilized for the receipt or shipment of waterborne cargo. Marine terminals serving an industrial function where the product transferred over the wharf is processed (e.g., crude oil refineries) are not included in this plan. For purposes of this plan, a marine terminal includes the wharf, storage area, offices, rail and truck facilities, container freight stations, inter-

modal container transfer facilities, areas for maintenance of containers or container - handling equipment, and other functions necessary to the efficient operation of a terminal; it does not include employee parking.

Metric Ton means 2,205 lbs. or 1.102 short tons.

Military Sites means those shoreline sites within military installations that have potential for marine terminal use, if and when the military no longer needs them.

Neo-Bulk Cargo means cargo generally shipped in large quantities and having some characteristics of bulk commodities. Neo-bulk cargoes in the Bay Area are generally automobiles, steel products, and newsprint.

Port Priority Use Areas means shoreline sites needed for regional maritime port use that include within their premises marine terminals and directly-related ancillary activities such as container freight stations, transit sheds and other temporary storage, ship repairing, support transportation uses including trucking and railroad yards, freight forwarders, government offices related to the port activity, chandlers and marine services, and employee parking.

Productivity means the per berth capacity of marine terminals.

Regional Transportation System means the network of railroads, highways, pipelines, airways, waterways, and related facilities and services, and terminal areas, public or private, serving the San Francisco Bay Area.

Roll-on/Roll-off (RO/RO) means a method of ocean transport which permits wheeled vehicles (e.g., autos, trucks, forklifts) to drive on and off the vessel under their own power.

San Francisco Bay Area means the City and County of San Francisco and the counties of Alameda, Contra Costa, Marin, Napa, San Mateo, Santa Clara, Solano and Sonoma.

San Francisco Bay means the four interconnected bays of South San Francisco Bay, Central San Francisco Bay, San Pablo Bay, and Suisun Bay; and all areas subject to tidal action from the south end of South San Francisco Bay to the Golden Gate to the eastern end of Suisun Bay (Grizzly Bay and Honker Bay). In practice, the eastern boundary of the study area is defined to include the Contra Costa County shoreline to the Antioch Bridge and the Solano County shoreline to the extent of the BCDC jurisdiction near Collinsville.

Short Ton means 2,000 pounds or 0.907 metric tons.

Shoreline Sites means the shoreline lands or uplands bordering the San Francisco Bay.

Waterborne Cargo means receipts and shipments of foreign and domestic cargoes shipped in vessels or barges.

BCDC means the San Francisco Bay Conservation and Development Commission

EIR means Environmental Impact Report, a document required by the California Environmental Quality Act, to analyze the environmental consequences of development projects and plans.

EIS means Environmental Impact Statement, required by the federal National Environmental Protection Act.

Implementation

FISCO means the Naval Fleet and Industrial Supply Center, Oakland, formerly known as the Naval Supply Center Oakland.

GGPA means the Golden Gate Ports Association, a voluntary organization of the Bay Area's ports.

LTMS means the Long Term Management Strategy for dredging, which will develop coordinated policies for dredging and dredging regulation throughout San Francisco Bay.

MLLW means Mean Lower Low Water, a tidal datum that describes the arithmetic mean of the lower low water heights of a mixed tide observed over a specific 19-year cycle.

MTC means the Metropolitan Transportation Commission.

NAS Alameda means the Naval Air Station at Alameda.

NSC Alameda means the Naval Supply Center Annex at Alameda.

RTP means the Regional Transportation Plan, prepared and implemented by the MTC.

TEU means one container, or one twenty-foot equivalent unit.

APPENDIX E

DISCUSSION OF PUBLIC TRUST DOCTRINE

The Public Trust Doctrine provides that tidal and navigable freshwater within California, the lands beneath, and the living resources inhabiting those waters are held in special title. Public Trust lands may be either publicly or privately owned. In either case, the State retains and holds in trust the public's collective rights to fully use and enjoy Public Trust lands and waters for commerce, navigation, fishing, recreation, open space, scenic value, aquatic habitat, and related educational, scientific, and public purposes. Where Public Trust lands are privately owned or have been granted to the City, the State has conveyed the lands but keeps, in trust for the people of the state, the public's collective rights to use and enjoy the property. The City desires to maintain, protect, and enhance the ecological integrity of this land within the given urban context.

APPENDIX F

DEVELOPMENT AGREEMENT FOR PINE LAKE AREA

RESOLUTION NO. 87-36

A RESOLUTION AUTHORIZING THE MAYOR TO EXECUTE A DEVELOPMENT AGREEMENT BETWEEN THE CITY OF BENICIA AND BENICIA INDUSTRIES (PINE LAKE PROPERTY)

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF BENICIA that Marilyn C. O'Rourke, Mayor, be and she hereby is authorized to execute a Development Agreement between the City of Benicia and Benicia Industries conveying the Pine Lake property to Benicia Industries, subject to the provisions in the Development Agreement.

On motion of Councilmember Roetzer, seconded by Councilmember Ciarrocchi, the above resolution was introduced and passed by the Council of the City of Benicia at a regular meeting of said Council held on the 3rd day of March, 1987, and adopted by the following vote:

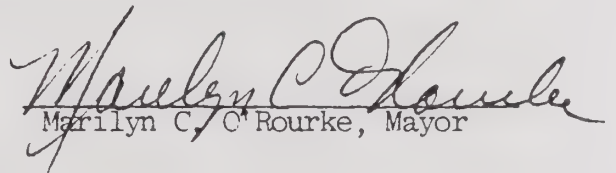
Ayes: Councilmembers Ciarrocchi, Fuller, Roetzer, Temple and
Mayor O'Rourke

Noes: None

Absent: None

Attest:


Frances D. Greco, City Clerk


Marilyn C. O'Rourke, Mayor

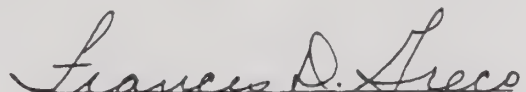
I, Frances D. Greco, City Clerk of the City of Benicia, County of Solano, State of California, hereby certify that the foregoing resolution was introduced and passed by the Council of the City of Benicia at a regular meeting of said Council held on the 3rd day of March, 1987, and adopted by the following vote:

Ayes: Councilmembers Ciarrocchi, Fuller, Roetzer, Temple and
Mayor O'Rourke

Noes: None

Absent: None

WITNESS my hand and the seal of said City this 4th day of March, 1987.


Frances D. Greco, City Clerk

CITY OF BENICIA
RESOLUTION NO. 87-37

Authorizing the City of Benicia to Convey to
Benicia Industries, Inc. Certain Real Property
and to Execute a Deed

WHEREAS, on November 21, 1986, the City of Benicia, a political subdivision of the State of California (hereinafter called the "City"), received from legal counsel for Benicia Industries, Inc. ("Benicia Industries") a demand that the City convey to Benicia Industries certain real property within the City known as "Pine Lake" and more particularly described on Exhibit A attached hereto; and

WHEREAS, Benicia Industries has stated that it will commence litigation to compel conveyance of Pine Lake if the City does not promptly convey Pine Lake; and

WHEREAS, the City has analyzed its possible defenses to such an action and, upon advice of counsel, has concluded that the conveyance should be made, subject to a Development Agreement in the form attached hereto as Exhibit B; and

WHEREAS, conveyance of the real property in question would be accomplished by execution of a deed in the form attached hereto as Exhibit C;

NOW, THEREFORE, the City Council of the City of Benicia (the "Council") resolves as follows:

RESOLVED, that the Council does hereby irrevocably authorize the grant to Benicia Industries of certain real property as described on Exhibit A attached hereto;

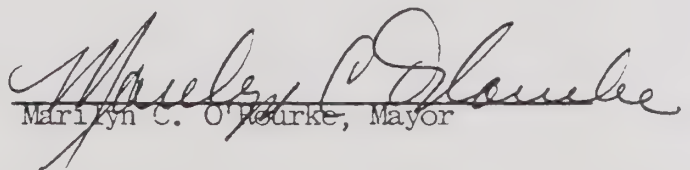
FURTHER RESOLVED, that Marilyn C. O'Rourke, Mayor of the City of Benicia, and Frances Greco, Clerk of the City of Benicia, are hereby authorized, for and on behalf of and in the name of the Council, to execute, attest and deliver any and all documents, including the Development Agreement in the form attached hereto as Exhibit B and deed in the form attached hereto as Exhibit C, and to take any and all action that may be necessary or desirable in connection with completion of the grant.

On motion of Council Member Roetzer,
seconded by Council Member Ciarrocchi, the Council of the City of Benicia introduced and passed the above Resolution at a regular council meeting held in Benicia, California on March 3,, 1987, and adopted the following vote:

Ayes: Councilmembers Ciarrocchi, Fuller, Roetzer, Temple and
Mayor O'Rourke

Noes: None

Absent: None


Marilyn C. O'Rourke, Mayor

Attest:

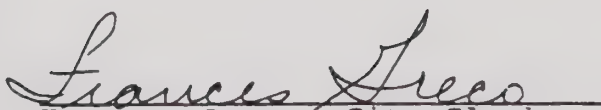

Frances Greco, City Clerk

EXHIBIT A

Commencing at the most Westerly corner of that certain 690.33+ Acre parcel of land identified as TRACT NO. 1 on a map entitled "BENICIA ARSENAL, CALIFORNIA, BOUNDARY MAP," dated October, 1935 and recorded in Book 8 of Maps, Page 8, Records of Solano County, California; thence along the Northwest boundary of said Benicia Arsenal, North 29° 15' East, 270.18 feet to the proposed Northerly Right-of-Way line of State Highway X-SOL-74-C; thence leaving said boundary and proceeding along said proposed Right-of-Way South 63° 26' 17" East, 258.40 feet; South 76° 01' 39" East, 277.27 feet; thence South 83° 09' 35" East, 321.60 feet to the true point of beginning of Area No. 2; thence leaving said Right-of-Way line North 60° 18' 00" West, 267.76 feet; North 5° 28' 30" East, 673.27 feet; North 79° 24' 30" East, 999.31 feet; South 39° 19' 00" East, 873.27 feet; and South 6° 21' 37" East, 143.56 feet to the above described Northerly Right-of-Way line; thence along said line South 80° 48' 21" West, 352.90 feet; South 81° 23' 53" West, 500.05 feet; South 82° 30' 25" West, 408.65 feet; and North 83° 09' 35" West, 136.16 feet to the true point of beginning, containing 26.802 acres, more or less.

DEVELOPMENT AGREEMENT

This Agreement is entered into this 3rd day of March, 1987 by and between the City of Benicia, a municipal corporation ("CITY") and Benicia Industries, Inc., a California corporation ("BENICIA INDUSTRIES") for the consideration hereinafter identified.

RECITALS:

1. CITY and BENICIA INDUSTRIES, together with the Surplus Property Authority of the City of Benicia, entered into a Property Exchange Agreement in 1975, authorized by CITY's City Council by Resolution No. 78-27 and approved by CITY's electorate on May 27, 1975, which provided, among other things, for CITY's conveyance to BENICIA INDUSTRIES of that certain real property described as set forth on Exhibit A attached hereto (hereinafter referred to as the "Pine Lake Property").

2. A question subsequently arose as to CITY's obligation under the Exchange Agreement to convey the Pine Lake Property to BENICIA INDUSTRIES. On November 20, 1986 BENICIA INDUSTRIES notified CITY in writing that it would commence legal action to compel the making of such conveyance by CITY unless an acceptable compromise agreement could be reached.

3. By Resolution No. 87-37, CITY's City Council has authorized the settlement of such dispute, upon advice of counsel, by the conveyance of the Pine Lake Property to BENICIA INDUSTRIES subject to the provisions of this Development Agreement. This Agreement is entered into in consideration of the settlement of such dispute.

AGREEMENT:

1. BENICIA INDUSTRIES agrees for itself, its successors and assigns, as a covenant running with the Pine Lake Property, that as conditions to any land use permits or entitlements for development of any portion of the Pine Lake Property or subdivision thereof, and as a condition precedent to the issuance of any building permit for any portion of the Pine Lake Property, the Owner/Developer thereof shall:

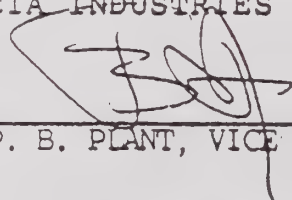
(a) Submit to CITY for its review and approval a plan for the Owner/Developer's setting aside of an open space or greenbelt area (the "Open Space Plan") along the Pine Lake Property boundaries adjacent to Interstate Highway 780, reasonably designed to provide an attractive entry to CITY along Interstate Highway 780, which Open Space Plan CITY may require comprise up to but not more than six and one-half percent (6.5%) of the total gross land area of the Pine Lake Property. Said Open Space Plan shall provide for the Owner/Developer's landscaping and maintenance of said open space or greenbelt area at the Owner/Developer's sole cost pursuant to a landscape plan to be submitted to CITY for review and approval at the time of or prior to submittal of a Development Plan, and in any event prior to issuance of building permits, for all or any portion of the Pine Lake Property.

(b) Submit to CITY for its review and approval a plan to incorporate and maintain in the development of the Pine Lake Property an attractive lake or water presence (the "Aquatic Plan"), which may include a single lake, multiple lakes or ponds, or decorative waterways, to be installed at Owner/Developer's sole cost, reasonably adequate to be in keeping with the historical designation of the property as the Pine Lake Property and reasonably related to the economic development of the property. The acreage included in the Aquatic Plan shall be credited against landscape acreage requirements (to be considered separate and apart from the above-referenced open space or greenbelt area), imposed by the CITY under regulations prevailing at the time that Development Permits are requested. The Aquatic Plan shall be designed so that some or all of the body or bodies of water shall be visible from Interstate Highway 780.

2. A Memorandum of Agreement Imposing Covenants Running With the Land, in the form attached hereto as Exhibit B, has been entered into concurrently herewith, which CITY may record in Solano County Official Records. If CITY records such Memorandum, CITY shall record a document terminating such covenants upon CITY's review and acceptance of and the Owner/Developer's completion or bonding for completion of the aforementioned Open Space Plan and Aquatic Plan.

3. It is understood that this Development Agreement is not intended to and shall not be deemed as providing any land use entitlement or permit for the development or subdivision of the Pine Lake Property, all of which shall be and remain subject to the Owner/Developer's compliance with ordinances of the City of Benicia then in effect.

BENICIA INDUSTRIES

By: 

P. B. PLANT, VICE PRESIDENT

And:

JOHN J. VOLLERT, SECRETARY-TREASURER

CITY OF BENICIA


Marilyn C. O'Rourke, Mayor

ATTEST:


Frances Greco, City Clerk

APPENDIX G

HAZARDOUS SUBSTANCES IN BENICIA

General locations of identified known or suspected hazardous substances sites in Benicia are shown on Figures G-1, G-2, and G-3. Figure G-1 shows the city as a whole, while Figures G-2 and G-3 show enlargements of the Downtown/Arsenal and Industrial areas of Benicia, respectively. Tables G-1 and G-2 present the site name, address, and regulatory database in which the site was identified for sites shown on Figures G-1, G-2, and G-3.

1. IDENTIFIED HAZARDOUS WASTE SITES

A computerized search of regulatory agency lists shows a number of sites within the Benicia planning area that are also potentially contaminated with hazardous wastes.¹ These lists include sites where contamination is either suspected or confirmed by the regulatory agencies. The agency lists that were reviewed to identify the sites are described in the appendix of the Safety Background Report.

Identification of a site on a regulatory agency list does not necessarily indicate that contamination has occurred, only that the regulatory agencies have had reason to suspect that contamination has occurred. Regulatory agency files were not reviewed to determine the status of the sites identified by the record search.

There are 57 identified hazardous waste sites in the planning area. With four exceptions—the IT Panoche Hazardous Waste Facility (Map site 1), the Braito Landfill (Map site 2), the landfill at the Benicia State Park site (Map site 54), and the leaking underground storage tank at The Food and Liquor Store, 51 West J Street (Map site 36)—all of the sites identified by the records search are located within the Downtown or industrial areas of Benicia. Because of this, the potential for a site to be located close to an immobile population considered a sensitive receptor, such as a hospital or school, is low.

¹ NATEC Environmental Reporting Services, Ltd, Environmental Disclosure Report, November 29, 1995.

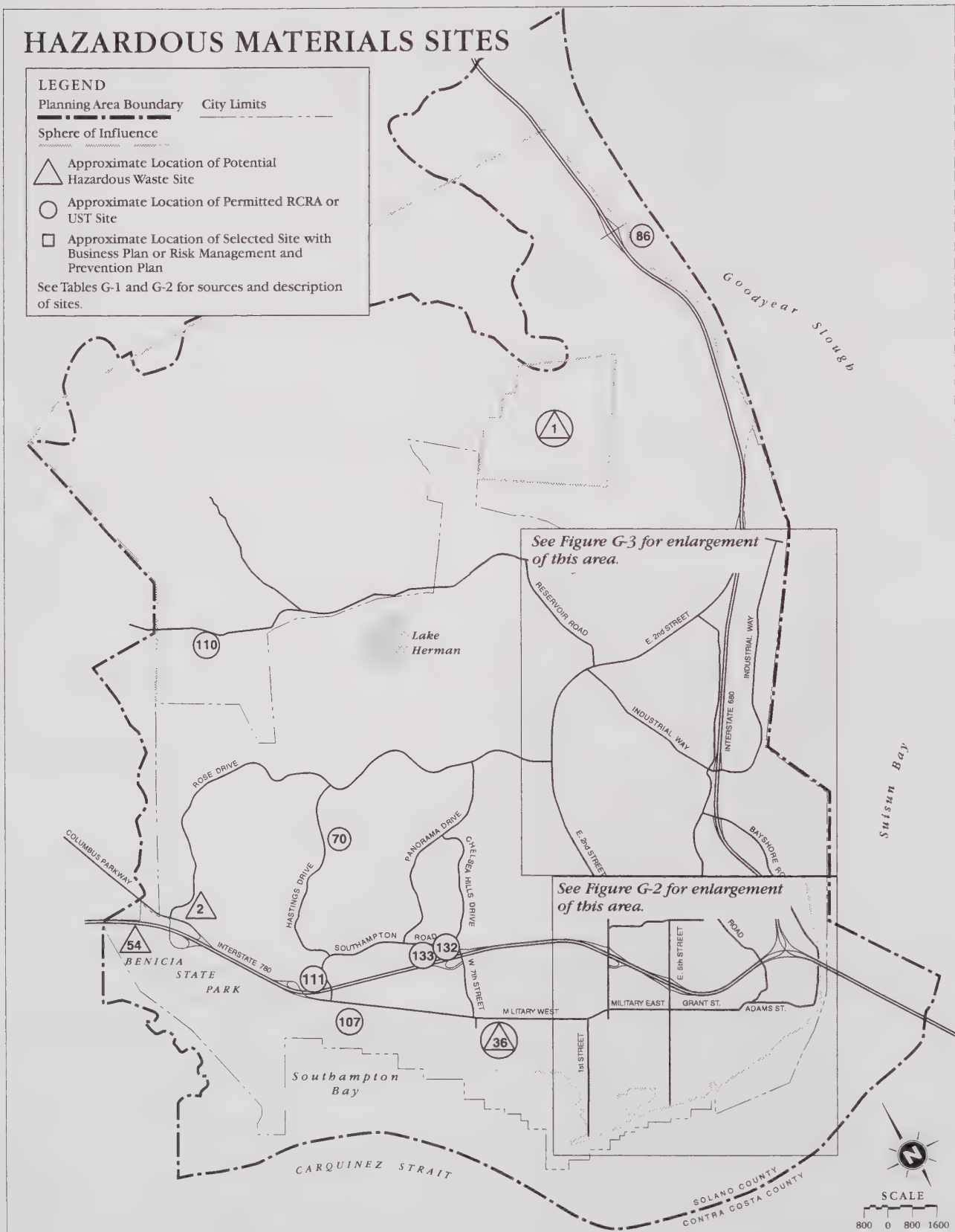


Figure G-1. Hazardous Materials Sites in the Benicia Planning Area

HAZARDOUS MATERIALS SITES



Figure G-2. Hazardous Materials Sites in the Downtown Area

HAZARDOUS MATERIALS SITES



Figure G-3. Hazardous Materials Sites in the Industrial Area

Table G-1. Identified Hazardous Waste Sites, Benicia Planning Area

MAP	SITE NAME	SITE ADDRESS	CERCLIS	SARA	Cal -Sites	Cortese	LUST	SWIS	WMUDS	WDS
1	IT Panoche Facility	Lake Herman Rd.			X				X	X
2	Braitto Landfill	Rose Drive			X			X	X	
4	Benicia Auto Parts	800 First St.					X			
5	Schneider, Harry	1001 First St.					X			
6	Texaco	1602 E Second St.				X	X			
7	Exxon	1925 E Second St.				X	X			
8	Exxon Corp., Benicia Refinery	3400 E Second St.		X	X				X	X
9	Exxon Marketing Terminal	3410 E Second St.				X	X			
10	49650 Second St. E	4650 E Second St.					X			
11	PG&E-MGP-Benicia	H/East Second/ I/ First St			X					
12	Benicia Wastewater Treatment Plant	614 E Fifth St.			X	X	X			
14	Food and Liquor	1500 E Fifth St.				X	X			
15	Suba Mfg., Inc.	921 Bayshore Rd.		X						
16	AAA Sales	2989 Bayshore Rd.				X	X			
17	Lutz Property	3001 Bayshore Rd.				X	X			
18	AJ Chemical Co., Inc.	200 Channel Rd.			X					
19	W.T. Universal Engineering	105 E Channel Rd.				X	X			
20	Universal Engineering	155 E Channel Rd.					X			
21	PIE Trucking Terminal	155 E Channel Rd.				X				
22	Liquid Carbonic	331 E Channel Rd.				X	X			
23	Corey Construct. Co.	511 E Channel Rd.				X	X			
24	Metropolitan Van & Storage	115 W Channel Rd.				X	X			
25	Bay Area/ Diablo Petroleum	116 W Channel Rd.					X			
26	JPH INC	300 W Channel Rd.					X			
27	Bezzarides Property	398 W Channel Rd.					X			
28	Benicia Dredge Disposal	1 E&D Streets			X					
29	Olin Corp.	Bldg. 68, Industrial Way	X		X					

Table G-1. Identified Hazardous Waste Sites, Benicia Planning Area (cont.)

MAP	SITE NAME	SITE ADDRESS	CERCLIS	SARA	Cal -Sites	Cortese	LUST	SWIS	WMUDS	WDS
30	Insured Transporters Inc.	100 Industrial Way				X	X			
31	Import Dealer Service	175 Industrial Way					X			
32	Ryder Truck Rentals	317 Industrial Way				X	X			
33	Disalvo Trucking	345 Industrial Way					X			
34	Bedford Properties	435 Industrial Way				X	X			
35	Benicia Industrial Park	4251 Iowa					X			
36	Food & Liquor Store	510 W J St.				X	X			
37	Liberty High School	350 E K St.	X		X					
38	City of Benicia	250 Lake Herman Rd					X			
39	Dresser-Rand Co.	3781 Mallard Dr.				X	X			
40	Liquor Warehouse	457 E Military St.				X	X			
41	7-Eleven	500 E Military St.				X	X			
42	Toyota Motor Sales	1 Oak Rd.					X			
43	Commercial Carriers Inc.	1898 Park Rd.				X	X			
44	Benicia Industries	2050 Park Rd.				X				
45	Huntway Refining Co.	3001 Park Rd.		X						
46	The Customer Co.	4457 Park Rd.				X	X			
47	Pepsi-Cola West	4701 Park Rd.				X	X			
48	Breuners	539 Stone Rd.				X	X			
49	W.R. Meadows of CA., Inc.	160 Teal Ct.				X	X			
50	Century Insulation Inc.	203 Teal Ct.					X			
51	Cal Auto Center	Bldg. 89, Tyler St.			X					
52	WQC-Maintenance Dredging	Benicia Port Terminal Dock						X		
53	Benicia Marina Dredging	Foot of Second at Waterfront St.			X					
54	Benicia State Recreation Area	Benicia State Park							X	
NA	Benicia Municipal Dump	City of Benicia			X					
NA	Benicia Arsenal Site	Industrial Park			X					
NA	Benicia Industrial Park	Bayshore Rd.			X					

Table G-1. Identified Hazardous Waste Sites, Benicia Planning Area (cont.)**Abbreviations:**

CERCLIS =	Comprehensive Environmental Response, Compensation and Liability Information System.
SARA =	Toxic Chemical Release Inventory of Title III of the Superfund Amendments and Reauthorization Act.
Cortese =	Listing of potential and confirmed hazardous waste sites, previously maintained by the Office of Planning and Research.
Cal-Sites =	Listing of potential hazardous waste sites maintained by the California Department of Toxic Substances Control (DTSC).
LUST =	Leaking Underground Storage Tank List.
WDS =	Waste Discharge System, list of sites with waste discharge requirements.
WMUDS =	Waste Management Unit Discharge System, identifies waste management units.
SWIS =	Solid Waste Information Systems database.
NA =	Not applicable, site could not be located with available information.

Notes:

1. See Appendix C of the Safety Background Report for an explanation of each database identified.
2. There is no Site 13 in this Figure.

Source: Orion Environmental Associates; NATEC Environmental Reporting Service, November 29, 1995.

Sites identified on the regulatory lists also represent only those sites which are suspected of being contaminated or have had cause for hazardous materials investigations, generally due to site disturbance activities such as removal of an underground storage tank, a spill of hazardous substances, or excavation for construction. The extensive history of urbanization and use of hazardous substances in Benicia makes it likely that additional sites exist within the project area that have not yet been identified or reported to regulatory agencies. These sites may be identified through future construction activities or other site disturbances. Land uses of concern, either existing or previous, are generally associated with industrial and some commercial activities. Chemical handling and storage practices are a common source of contamination.

The sections below describe the types of sites identified in the search.

CERCLIS SITES

Two sites were identified on the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list which includes sites designated for investigation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). One CERCLIS site is Olin Corporation (Map site 29) and the other is the Liberty High School (Map site 37). The need for investigation of these sites would be determined on the basis of a preliminary assessment or site inspection.² The

² A preliminary assessment and site inspection are the first two steps of investigation under CERCLA to identify whether a site is potentially contaminated. A preliminary assessment generally includes a review of site information and a site visit. If the potential for contamination is indicated, then a site inspection is generally conducted to review the site in more detail and samples are usually collected from areas that are suspected to be contaminated.

status of these sites was not available in the information included with the records search. However, City staff believes that the EPA has conducted a preliminary assessment of Liberty High School and has concluded that no further action is warranted there.

Cal-Sites

Fourteen sites were identified on the Cal-Sites list which includes sites identified by the Historical Abandoned Site Survey Program and researched by the California Department of Health Services (currently known as the Department of Toxic Substances Control or DTSC). These sites were identified by the agency as potential hazardous waste sites, but sampling has not necessarily been conducted to evaluate the potential for contamination. Based on the database review, the DTSC has recommended no further action for the Benicia Arsenal Site and the Benicia Marina Dredging (Map site 53). The lead regulatory agency for six of the sites including the Exxon Refinery (Map site 8), AJ Chemical Corporation (Map site 18), Benicia Dredge Disposal Site (Map site 28), Benicia Wastewater Treatment Plant (Map site 12), Cal Auto Center (Map site 51), and Benicia Municipal Dump (no site number) was transferred to the RWQCB. The lead regulatory agency for the Olin Chemical Corporation (Map site 29) has been transferred to the Solano County Environmental Management Department, and the lead regulatory agency for Liberty High School (Map site 37) has been transferred to the US EPA. The Benicia Industrial Park (Map site 35) has been remediated, and a site screening was recommended for the previous PG&E manufactured gas plant (Map site 11). DTSC is the Lead Agency for the IT site (Map site 1).

WASTE DISCHARGE SYSTEM DATABASE SITES

Three sites were identified in the Waste Discharge System database; this database includes sites that have been issued waste discharge requirements by the RWQCB. The sites that were identified in the database are the IT Panoche Facility (Map site 1), the Exxon Refinery and Maintenance Dredging at the Exxon Refinery Dock (Map site 8) and maintenance dredging at the Benicia Port Terminal Dock (Map site 52). The waste discharge requirements were issued because hazardous wastes are present at the IT Panoche Facility and the Exxon Refinery. The wastes associated with the maintenance dredging are inert dredge spoils that should not pose a threat to public health or the environment. The Exxon Refinery and the Benicia Wastewater Treatment Plant each have a National Pollutant Discharge Elimination System (NPDES) permit issued by the RWQCB for designated process water and domestic wastewater.

WASTE MANAGEMENT UNIT DATABASE SYSTEM SITES

Four sites were identified in the Waste Management Unit Database System which is used by the RWQCB to track and inventory waste management units. This database enhances the Waste Discharge System database and contains information regarding waste management units falling under the Solid Waste Assessment Test program and the Toxic Pits Clean Up Act program. The IT Panoche Facility (Map site 1), Braito

Landfill (Map site 2), Exxon Refinery (Map site 8), and Benicia State Recreation Area (Map site 54) are identified on this database.

SOLID WASTE INFORMATION SYSTEMS DATABASE SITES

The Braito Landfill (Map site 2) was also identified in the Solid Waste Information Systems database, which is an inventory of active, inactive, and closed solid waste disposal and transfer facilities.

SARA SITES

Three sites were identified in the Toxic Chemical Release Inventory database (SARA). These are sites that were required to file an annual toxic chemical release inventory form with the US EPA and the California Environmental Protection Agency. Facilities are required to report releases to air, water, and land under Section 313 of the Emergency Planning and Community Right to Know Act (Title III of the Superfund Amendments and Reauthorization Act of 1986). The Exxon Refinery (Map site 8) reported releases of various organic compounds, metals, and acids. Suba Manufacturing (Map site 15) reported releases of toluene and methanol to the air. Huntway Refining Company (Map site 45) reported releases of various organic compounds and hydrochloric acid.

CORTESE LIST SITES

Twenty-five sites were identified on the Cortese List, which includes both potential and confirmed hazardous waste sites as of November 1990. This list was originally maintained as a compilation of potential hazardous waste sites identified in many regulatory databases. Twenty-four of these sites were also identified on the Leaking Underground Storage Tank (LUST) list which includes sites with confirmed leaking underground storage tanks indicating that they were on the Cortese List because of a confirmed leak. The reason for the listing of Benicia Industries (Map site 44) is not clear from the information contained in the database.

LUST SITES

Twenty-six sites were identified in the Leaking Underground Storage Tank (LUST) database. This database includes sites that have reported leaks from underground storage tanks. Leaking underground storage tanks are a common source of soil and groundwater contamination. Underground storage tanks have been used in a wide variety of industries for storage of gasoline, diesel, waste oils, and other chemicals. Prior to regulation in the 1980s, underground tanks were typically not subject to monitoring or provided with secondary containment. If a tank leaked, the contents could migrate to the soil, and if undetected, could then also contaminate the groundwater. Contaminated groundwater plumes can migrate long distances and affect adjacent land uses.

2. HAZARDOUS MATERIAL AND WASTE HANDLERS

Hazardous substances are commonly used and handled within Benicia under a wide variety of permitted activities and land uses. The use of these substances presents a lower risk to the public and the environment than the potential hazardous waste sites identified above because the handling and storage of these materials are extensively regulated with the objective of protecting public health and the environment. This section includes a summary of current uses of hazardous materials in Benicia including sites with permitted underground storage tanks, sites permitted to handle hazardous wastes under the Resource Conservation and Recovery Act (RCRA), and selected sites that have filed Business Plans or Risk Management and Prevention Plans with the Solano County Department of Environmental Management.

UNDERGROUND STORAGE TANKS

Sites with currently permitted underground storage tanks were identified during the records search; the sites identified within Benicia are listed in Table G-1 and shown in Figures G-1, G-2, and G-3. The records search identified 64 sites with permitted underground storage tanks. With the exception of one site located at 1280 West “K” Street located in a residential area, all of the sites are located within the downtown or industrial areas of Benicia. Current requirements for underground storage tanks include tightness testing on a regular basis to monitor for leakage reduces the potential for undetected leakage from these underground storage tanks. However, these sites are potential sources of hazardous waste contamination for soil or groundwater or both because of incidental leakage or spillage that may have gone undetected. Any soil or groundwater contamination at a site with a permitted underground storage tank would typically be identified when required samples are collected during tank repairs or replacement.

Unpermitted underground storage tanks may be present at sites where the use of the tank was discontinued before monitoring requirements were implemented in the 1980s. Soil or groundwater contamination or both could also occur at these sites; however, there is no agency tracking of these sites. It would be necessary to perform a detailed review of the site history to identify whether there is an unpermitted underground storage tank at a specific site.

**Table G-2. Permitted RCRA and Underground Storage Tank Sites,
Benicia Planning Area**

MAP #	SITE NAME	SITE ADDRESS	RCRA	UST
1	IT Corporation	Lake Herman Road	TSD/LQ	X
4	Benicia Auto Parts	800 First Street		X
5	ARCO Station	1001 First Street		X
6	Texaco Station	1602 East Second Street		X
7	Exxon Service Station	1925 East Second Street	SQ	X
8	Exxon Corp Benicia Refinery	3400 East Second Street	LQ	X
9	Exxon Marketing Terminal	3410 East Second Street	LQ	X
10	BP Oil Co	3410 East Second Street	LQ	
12	Benicia Wastewater Treatment Plant	614 East Fifth Street	T	
14	Benicia Food Mart	1500 East Fifth Street		X
17	Lutz Tire/ Metro Tire	3001 Bayshore Road		X
18	AJ Chemical Co Inc	200 Channel Road	LQ	
22	Liquid Carbonic	331 E Channel Road		X
25	Bay Area Petroleum Co	116 W Channel Road		X
27	Bezzerrides Co., Inc.	398 W Channel Road		X
29	Olin Corporation	Bldg 68 Industrial Park	TSD /LQ	
30	Insured Transporters Inc.	100 Industrial Way		X
31	Import Dealer Service	175 Industrial Way		X
33	Di Salvo Trucking	345 Industrial Way		X
35	Bedford Properties	4251 Iowa		X
36	Liquor & Food (Bob's)	510 W J St		X
38	City of Benicia Water Treatment	Lake Herman Road		X
40	Liquor Warehouse	457 E Military St		X
41	7-Eleven Food Store #2211	500 E Military St	LQ	X
42	Toyota Motor Sales	1 Oak Rd		X
43	Commercial Carriers Inc	1898 Park Rd	SQ	X
44	Benicia Industries	2050 Park Rd		X
45	Huntway Refining Co	3001 Park Rd	LQ	
46	The Customer Company	4457 Park Rd		X
47	Pepsi Cola Co	4701 Park Rd		X
48	Breuners	539 Stone Rd		X
49	W.R. Meadows of California, Inc	160 Teal Ct	SQ	X
50	Century Insulation Inc	203 Teal Ct		X
53	Benicia Marina	266 E B St		X
55	Pacific Bell	935 East Second Street	T/LQ	X
56	City of Benicia Corp Yard	2400 East Second Street		X
57	Noyes Lumber	4563 East Second Street		X
58	Paul H Lindemann	4588 East Second Street	SQ	
59	Gary Raes	4588 East Second Street	SQ	
60	A L Gears	4740 East Second Street	SQ	
61	Welsh Products, Inc.	1201 East Fifth Street		X
62	Distribution & Auto Service	700 Bayshore Road	SQ	

**Table G-2. Permitted RCRA and Underground Storage Tank Sites,
Benicia Planning Area (cont.)**

MAP #	SITE NAME	SITE ADDRESS	RCRA	UST
63	Benicia Industries	700 Bayshore Road		X
64	Larry Hazard	2980 Bayshore Road		X
65	Goulds Pro Shop	3000 Bayshore Road	SQ	
66	Western American Forest	3150 Bayshore Road		X
67	Paint Yard Toll Plaza Benicia	Benicia Bridge Toll Plaza	SQ	
68	California Erectors	4500 California Ct		X
69	Benicia Pump Repair	2161 Camel Rd	SQ	
70	Channel Trucking	471 Camellia Ct	T	
71	Bond Co.	105 Channel Road		X
72	Benicia Auto & Truck	265 Channel Road	SQ	
73	Benicia Plumbing	265 Channel Ct		X
74	Channel Trucking Inc	265 Channel Ct		T
75	Benicia Fabrication	101 E Channel Road	SQ	
76	Chemical Waste Management	155 E Channel Road		X
77	Alhambra Natural Water Company	393 E Channel Road	LQ	
78	Rust Industrial Cleaning	511 E Channel Road		T
79	Corey Delta Inc.	511 E Channel Road		X
80	Excel Transportation	290 W Channel Road	T/sq	
81	Ryder Truck Rental	300 W Channel Road	SQ	X
82	Delta Tech Service Inc	397 W Channel Road	T/sq	
83	Coca Cola	530 Getty Ct	LQ	X
84	Krogh Pump Co	531 Getty Ct Ste C	SQ	
85	Fisher Serv Co	531 Getty Ct Ste D	LQ	
86	Dillingham Construction	2100 Goodyear Rd	SQ	
87	Diesel Systems, Inc	674 E H St	UNK	
88	State Military Dept. Oms	711 Hillcrest Ave	SQ	X
89	Pepsi Cola Benicia Central	652 Indiana		X
90	ITT Hancock Ind.	Bldg Cl-1 Industrial Park	LQ	
91	Bay Area Instrument	175 Industrial Way	SQ	
92	Ryder Truck Rental	243 Industrial Pkwy		X
93	Infergene Corporation	433 Industrial Way	SQ	
94	Benicia Viii W 9	433 Industrial Way, Ste 220	SQ	
95	Ace Hardware Corporation	433 Industrial Way		X
96	Kemper Real Estate	433 Industrial Way		X
97	Pacific Rim Environmental	433 Industrial Way, Ste 206	T	
98	APM Inc	441 Industrial Way	SQ	
99	Chemical Waste Management	610 Industrial Way		X
100	Universal Engineering Inc	610 Industrial Way	T/LQ	
101	Hadley Auto Transport	3800 Industrial Way	SQ	X
102	Underground Construction	5145 Industrial Way	LQ	X
103	Big 4 Rents Benicia	5251 Industrial Way	SQ	
104	Sonoco Properties Company	4347 Iowa	SQ	

Table G-2. Permitted RCRA and Underground Storage Tank Sites, Benicia Planning Area (cont.)

MAP #	SITE NAME	SITE ADDRESS	RCRA	UST
105	Benicia Mini Storage	711 Jackson St		X
106	J R Schneider Co Inc	849 Jackson St	LQ	
107	City of Benicia	1280 W K St		X
108	City of Benicia Police Dept	200 E L St		X
109	Reeds Body & Fender	479 E L St	SQ	
110	Teodora Bello Dairy	Lake Herman Rd		X
111	Mack X-Ray	1752 London Dr	T	
112	Ingersoll Rand Corp Service D	3673 Mallard Dr	LQ	
113	L&M Pallet	3781 Mallard Dr		X
114	Hydro Tech Transportation	3800 Mallard Dr	T	
115	S.E.G.Trucking	4050 Mallard Dr		X
116	Delta Debris Box Service	4080 Mallard Dr	T	
117	Beacon Mini Mart	505 E Military St		X
118	City of Benicia Fire	150 W Military		X
119	Family Doctor Medical Group	160 E N St	SQ	
120	Benicia Import Auto Service	1 Oak Rd	SQ	
121	Conhagen	3900 Oregon St	SQ	
122	Precision Products	3900 Oregon St, Ste 3	SQ	
123	Allied Muffler	3948 Oregon St	LQ	
124	IT Transportation Corp	1845 Park Rd	T	
125	LK Comstock & Company	1879 Park Rd		X
126	Predelivery Service Corp	2050 Park Rd		X
127	Earthmovers Supply Co	3909 Park Rd, Ste a	SQ	
128	United States Can Company	4168 Park Rd	SQ	
129	A L Gears	4361 Park Rd	SQ	
130	Chevron #2661	10 Solano SQ		X
131	Benicia Cleaners	25 Solano SQ	SQ	
132	Perfection Cleaners	886 Southampton Rd	LQ	
133	Raleys 381	892 Southampton Rd	SQ	
134	Pacific Rim	3690 Sprig Dr	T/sq	
135	Cal-Bay Ind Serv Inc	3801 Sprig Dr	T	
136	Clean Drum Co	3845 Sprig Dr	T	
137	Roadway Express	3872 Sprig Dr	SQ	
138	PEM Insulation Co Inc	510 Stone Rd	T	
139	Cratex Mfg Co Inc	518 Stone Rd	SQ	
140	M and N Valve Corp	524 Stone Rd, Unit E	SQ	
141	Latchford Packaging Company	601 Stone Rd, Unit a	LQ	
142	Del-Tec	945 Teal Dr		X
143	Blair and Sons Inc	3867 Teal Dr	SQ	
144	Insultemp Inc	3948 Teal Dr	T	
145	JP Services Inc	3959 Teal Dr	T	
146	Hydro Service	3985 Teal Dr, Ste B	SQ	
147	Berco Parts Center	4072 Teal Dr	SQ	

Notes to Table G-2: Permitted RCRA and Underground Storage Tank Sites, Benicia Planning Area:

Table G-2. Permitted RCRA and Underground Storage Tank Sites, Benicia Planning Area (cont.)

Abbreviations:

RCRA =	Resource and Conservation Recovery Act
UST =	Underground Storage Tank. "X" in this column indicates that the site has at least one UST permitted by the State of California
T =	RCRA Permitted Transporter
SQ =	RCRA Permitted Small Quantity Generator
LQ =	RCRA Permitted Large Quantity Generator
TSD =	RCRA Permitted Transfer, Storage and Disposal Facility
NA =	Not applicable, site could not be located with the information available
UNK =	Type of RCRA facility was not identified.

Source: Orion Environmental Associates; NATEC Environmental Reporting Service, November 29, 1995.

RCRA SITES

Sites within Benicia that are permitted to handle hazardous wastes under the Resource Conservation and Recovery Act implemented by the US EPA are identified in Table G-1 and are shown on Figures G-1, G-2 and G-3. Twenty sites are classified as large quantity generators. Forty-two sites are permitted as a small quantity generator. Nineteen sites are classified as a treatment facility. Two sites are classified as a transfer, storage, and disposal facility. Handling of hazardous wastes at a permitted facility does not indicate that contamination has occurred, only that there is the potential for hazardous wastes to be present.

With the exception of a transporter located at 471 Camellia Court (Map site 70), a small quantity generator located at 886 Southampton Road (Map site 132), and a large quantity generator located at 892 Southampton Road (Map site 133), all of the permitted RCRA facilities are located in the Downtown or industrial areas of Benicia. Site 70 is in a residential neighborhood, so it could be a home business address that has hazardous materials stored at another location. Sites 132 and 133 are the Perfection Cleaners and the Raleys located in the Southampton Shopping Center on Southampton Road.

BUSINESS PLANS AND RISK MANAGEMENT AND PREVENTION PLANS

The Solano County Environmental Management Department implements regulations requiring businesses which handle hazardous substances to file Business Plans. Businesses which handle extremely hazardous materials are required to submit Risk Management and Prevention Plans (RMPPs).

The list of businesses which have filed Business Plans or Risk Management and Prevention Plans with the Solano County Environmental Management Department includes businesses which handle materials classified as hazardous under a very broad definition, including any chemical that requires a material data safety sheet. This means that plans are on file for businesses using materials which, when handled properly, pose a minimal risk to human health and the environment. For this reason, the list obtained from the Solano County Environmental Management Department was reviewed, and only those sites which handle chemicals identified on the following lists were included in this report:

- OSHA Process Safety Management Plan.
- Acutely hazardous materials identified in Appendix A to Title 40, CFR Part 355.
- Wastes classified as hazardous under Title 40, CFR Part 264.
- Wastes classified as hazardous under Title 22 of the California Code of Regulations.

Identified sites are listed in Table G-2.

The chemicals that were used as criteria for site identification in this report were selected because they are considered to have the greatest potential to affect human health or the environment if released. In the event of a release, the handlers of these materials would be required to notify regulatory agencies immediately and to mitigate the release.

In addition to those sites identified in Table G-2, the Benicia Wastewater Treatment Plant handles acutely hazardous materials including gaseous chlorine and sulfur dioxide. The Benicia Water Treatment Plant handles gaseous chlorine. Under state law, these facilities are not required to submit an RMPP, so they are not included in Table G-3. However, these facilities are required to have Process Safety Management Plans which include a risk hazard analysis. Preparation of such plans was underway as of 1996.

Other types of hazardous substances commonly used in industrial and commercial areas include chemicals such as solvents, degreasers, and industrial process chemicals. These can be toxic to human health and the environment even at low concentrations due to their persistence and bioaccumulative properties. Storage and handling of chemicals over extended periods increases the likelihood of spillage or accidents, which can build up over time without proper clean-up and management procedures. Prior to regulation, industrial discharges—whether intentional, inadvertent, or accidental—were common sources of water and soil pollutants.

Table G-3. Selected Sites with Business Plans or Risk Management and Prevention Plans, Benicia Planning Area

SITE NAME	SITE ADDRESS	MATERIAL OR WASTE	AHM	OSHA PSM	HAZARDOUS WASTE
Exxon Co. USA	3410 2nd Street	Waste Oil			X
Rick's Automotive	4592 2nd Street	Waste Antifreeze			X
Longs Drugstore Fixture	4700 2nd Street	Waste Paint			X
		Waste Solvent			X
		Waste Sludge			X
Sanders Towboat Service	201 5th Street	Waste Oil			X
Western America Forest	3150 Bayshore	Waste Oil			X
Metl-Saw Systems, Inc.	2950 Bay Vista	Solvent Waste			X
YLA	2970 Bay Vista	Solvent Waste			
Benicia Fabrication & Machine	101 Channel	Waste Oil			X
North Bay Water Services	250 Channel	Chlorine	X	X	
		Waste Acid Solution			X
		Waste Antifreeze			X
Clementina Refinery Services	251 Channel	Waste Oil			X
Allwaste Services of Northern CA	395 Channel	Waste Oil			X
Huntway Refinery	3001 Park	Oily Sludge			X
Jim Sinnott	511 Channel	Waste Oil			X
Benicia Lube & Oil	2026 Columbus	Waste Oil			X
Coca Cola Bottling Co. of CA	530 Getty	Waste Oil			X
		Waste Antifreeze			X
XFisher Service Co.	531 Getty	Waste Oil			X
Benicia Industries, Inc./Chrys	2650 Harbor	Waste Mineral Spirits			X
Manitowoc Western	100 Industrial Way	Waste Oil			X
		Waste Hydraulic Oil			X
Agreko	160 Industrial Way	Waste Oil			X
Dunlop Manufacturing, Inc.	170 Industrial Way	Waste Hydraulic Oil			X
		Waste Solvent			X
Kilgore Inc.	485 Industrial Way	Waste Oil			X
Corey Delta	610 Industrial Way	Waste Oil			X
		Oily waste debris			X
		Waste Anti-freeze			X
Underground Construction, Inc.	5145 Industrial Way	Waste Oil			
Big 4 Rents	5251 Industrial Way	Waste Oil			X
Cal Cork	4280 Iowa	Sulfur Dioxide	X		
Reed's Body & Fender Works	479 L Street	Waste Solvent			X
Big O Tires	415 Military	Waste Oil			X
Conhagen	3900 Oregon	Used Gear Oil			X
		Oily Wash Water			X

Table G-3. Selected Sites with Business Plans or Risk Management and Prevention Plans, Benicia Planning Area (cont.)

SITE NAME	SITE ADDRESS	MATERIAL OR WASTE	AHM	OSHA PSM	HAZARDOUS WASTE
Allied Manufacturing	3948 Oregon	Waste Mineral Spirits			X
Predelivery Service Corp.	2050 Park	Paint Waste			X
Earthmovers Supply	3909 Park	Waste Oil			X
Pepsi Cola Co.	4701 Park	Waste Oil			X
Unico Replacement Parts	1209 Polk	Waste Solvent			X
Chevron #2661	10 Solano Square	Waste Oil			X
		Waste Antifreeze			X
Benicia Cleaners	25 Solano Square	Waste Perchloro-ethylene			X
BFI Services Group, Inc.	945 Teal	Waste Oil			X
Garske's Boat Yard	C	Waste Oil			X

Explanation of column headings:

AHM = Acutely hazardous material identified in Appendix A to Title 40 of the Code of Federal Regulations, Part 355. Only those sites with quantities greater than quantities identified in the regulations are included.

OSHA PSM = California OSHA Process Safety Management Standard. Only those sites with quantities greater than quantities identified in the regulations are included.

HAZARDOUS WASTE = Waste classified as hazardous by the criteria contained in Title 40 of the Code of Federal Regulations, Part 264, or by the criteria contained in Title 22 of the California Code of Regulations. Sites which handle waste oil are only included when the reported quantity is greater than 110 gallons. All other waste handlers identified are included, regardless of the quantity of waste handled.

Source: Clint Holzwarth, Citizen Advisor; Solano County Environmental Management Department, January, 1996.

The potential for contamination at a site which handles hazardous substances depends on numerous factors, such as the type of business, type(s) and quantities of hazardous substances, handling and management practices, control and spill containment systems, adequacy of accident prevention and safety programs, training programs and emergency response plans, adjacent land uses, etc. When handled properly and when used in compliance with permitting and other regulatory requirements, hazardous substances do not necessarily pose a human health concern or a threat to the environment. Nevertheless, the nature of hazardous materials implies that there is an inherent risk to human health or the environment. The potential for accidents, earthquakes, unauthorized releases, or other mishaps beyond the control of normal operating procedures exists with associated potential for public health and environmental effects, albeit within acceptable standards.

Given the wide range of industries in Benicia, it is difficult to discuss, by industry type, the hazards that would occur. Toxic hazards from any industry typically include hazards to employees relating to chemical use during the manufacturing processes, or inadvertent or accidental spillage during transport and handling. The latter could also potentially release toxic chemicals to the soil or groundwater. Other types of toxic hazards could include inadvertent releases of airborne substances, including toxic gases, fumes, or dust, which could expose workers or the community to health hazards. In addition to toxic hazards, public health and safety concerns relate to the potential for fire and explosive hazards and transportation-related accidents.^{3,4}

³ Harte, John; Holdren, Cheryl; Schneider, Richard; and Shirley, Christine, *Toxics A to Z, A Guide to Everyday Pollution Hazards*. University of California Press, 1991.

⁴ Encyclopedia of Occupational Health & Safety, Third Edition, 1983. Technical Editor Dr. Luigi Parmeggiani. International Labor Office, Geneva.

APPENDIX H

WEBSITES FOR GEOLOGIC INFORMATION

During review of the General Plan, a request was made to include websites for geological information on, or related, to Benicia. While it is not possible to include all such websites, the following pages should assist the reader in getting started.

Start here...

<http://quake.wr.usgs.gov/CALHAZ/hazardtype.html>

Choose a Subject:

[Seismic Zonation, Earthquake Shaking, and Liquefaction -](#)

[Geologic Investigations](#)

[Earthquakes - Public Planning, Response, and Policy](#)

[Earthquake Triggered Landsliding](#)

[Landslides, Debris Flows, and Slope Stability - Geologic Investigations](#)

[Landslides - Public Planning, Response, and Policy](#)

[Flooding and Erosion](#)

[Erosion and Landsliding Triggered by Timber Harvesting](#)

[Volcanic Hazards](#)

[Coastal Hazards and Policy](#)

[Geologic Hazards to Dams](#)

[Geologic Maps and Fault Maps](#)

[Landslide and Slope Maps](#)

[Land Use Maps](#)

[Miscellaneous Subjects](#)

Select this...

[Go to County List.](#)

[Return to Hazards Home Page.](#)

<http://quake.wr.usgs.gov/CALHAZ/counties.html>

Choose an county to search:

Alameda County
Alpine County
Amador County
Butte County
Calaveras County
Colusa County
Contra Costa County
Del Norte County
El Dorado County
Fresno County
Glenn County
Humboldt County
Inyo County
Kern County
Kings County
Lake County
Lassen County
Madera County
Marin County
⋮
Napa County
Nevada County
Placer County
Plumas County
Sacramento County
San Benito County
San Francisco County
San Joaquin County
San Luis Obispo County
San Mateo County
Santa Clara County
Santa Cruz County
Shasta County
Sierra County
Siskiyou County
Solano County
Sonoma County

Selecting this...

<http://quake.wr.usgs.gov/CALHAZ/county/sohaz.html>

Brings you
here...

Solano County Geologic Hazards

References are organized by year of publication within each subject area. Click on a specific subject area to jump down.

[Seismic Zonation, Earthquake Shaking, and Liquefaction -](#)

[Geologic Investigations](#)

[Earthquakes - Public Planning, Response, and Policy](#)

[Earthquake Triggered Landsliding](#)

[Landslides, Debris Flows, and Slope Stability - Geologic Investigations](#)

[Landslides - Public Planning, Response, and Policy](#)

[Flooding and Erosion](#)

[Geologic Hazards to Dams](#)

[Geologic Maps and Fault Maps](#)

[Landslide and Slope Maps](#)

[Land Use Maps](#)

[Miscellaneous Subjects](#)

Seismic Zonation, Earthquake Shaking, and Liquefaction - Geologic Investigations-Solano County

Make sure to check out the online [earthquake shaking maps](#) from the Association of Bay Area Governments (ABAG).

1. TITLE: Liquefaction potential of the Sacramento-San Joaquin Delta, California.
AUTHOR(S): Finch-Michael-O
SOURCE: Master's Thesis, 466 p., 103 Refs.
YEAR: 1987
2. TITLE: Tectonic environment of the 1892 Vacaville/Winters earthquake, and the potential for large earthquakes along the western edge of the Sacramento Valley, California.
AUTHOR(S): Eaton-Jerry-P
SOURCE: Open-File Report U. S. Geological Survey. 16 p., 10 Refs.
YEAR: 1986
REPORT NUMBER: USGS Open File Report, OF 86-0370
AVAILABILITY: U. S. Geological Survey, Open-File Service Section, Western Distribution Branch, Federal Center, Denver, CO

3. TITLE: Computer-based earthquake mapping, San Francisco Bay area.
AUTHOR(S): Perkins-Jeanne; Olmstead-Donald-A
SOURCE: Open-File Report U. S. Geological Survey. 201 p.
YEAR: 1980
REPORT NUMBER: USGS Open File Report, OF 80-1147
AVAILABILITY: U. S. Geological Survey, Open-File Service Section, Western Distribution Branch, Federal Center, Denver, CO
4. TITLE: Earthquake losses to buildings in the San Francisco Bay area.
AUTHOR(S): Algermissen-S-T; Steinbrugge-K-V
SOURCE: Brabb, E. E. Progress on seismic zonation in the San Francisco Bay region. U. S. Geological Survey Circular. p. 61-72., 13 Refs.
YEAR: 1979
REPORT NUMBER: USGS Circular, C 0807
AVAILABILITY: U. S. Geological Survey, Earth Science Information Center (ESIC), Menlo Park, CA
5. TITLE: Progress on seismic zonation in the San Francisco Bay region.
AUTHOR(S): Brabb-E-E
SOURCE: U. S. Geological Survey Circular. 91 p.
YEAR: 1979
REPORT NUMBER: USGS Circular, C 0807
AVAILABILITY: U. S. Geological Survey, Earth Science Information Center (ESIC), Menlo Park, CA
6. TITLE: Seismic risk studies for San Francisco and for the Greater San Francisco Bay area.
AUTHOR(S): Oliveira-C-S
SOURCE: Report Earthquake Engineering Research Center, College of Engineering, University of California, Berkeley, California. (78/16). 126 p., 74 Refs.
YEAR: 1978
AVAILABILITY: National Technical Information Service, Springfield, VA
7. TITLE: Differentiation of sedimentary deposits for purposes of seismic zonation.
AUTHOR(S): Lajoie, K-R; Helley, E-J
SOURCE: U. S. Geological Survey Professional Paper. Stud. seism. zonation San Franc. Bay reg.. p.A39-A51
YEAR: 1975
REPORT NUMBER: USGS Professional Paper, P 0941-A
AVAILABILITY: U. S. Geological Survey, Earth Science Information Center (ESIC), Menlo Park, CA

Visit this web
site for the full
list of documents.

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APPENDIX I

REQUIREMENTS FOR AN ACOUSTICAL ANALYSIS

An acoustical analysis prepared pursuant to the Noise Section in the General Plan shall:

1. Be the financial responsibility of the applicant.
2. Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics. The City may require that the person is a designated "Member" of the Institute of Noise Control Engineering (INCE).
3. Noise analyses shall provide documentation that Type I or II noise measurement equipment was used when noise measurements are required. All equipment shall be calibrated in the field prior to and after conducting noise measurements with a matching calibrator. The analyses shall provide documentation on the noise level data used for the analysis, methods for calculating noise levels and methods used for modeling noise levels.
4. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and the predominant noise sources. Generally, to describe the ambient noise conditions, background noise level measurements should be conducted for a minimum of 24-hours. The measurements should include hourly average (L_{eq}), maximum (L_{max}), and other statistical descriptors where deemed appropriate. Written explanations of any noise peaks should also be included.

To describe typical existing hourly ambient conditions, generally, the logarithmic average of the measured L_{eq} values for each of the day and night periods should be provided. Unusual events which may influence measured data should either be discarded, or the noise level measurements should be re-taken.

5. Estimate existing and projected cumulative (20 years) noise levels in terms of L_{dn} or CNEL and/or the standards of Table 4-4 and compare those levels to the adopted policies of the Noise section in the General Plan.

The noise level standards contained within Table 4-4 shall be applied to a typical hour of operation. When a peak hour of operation is expected to occur consistently during daily or weekly operations, the standards shall also be applied to those operations.

6. Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise section, giving preference to proper site planning and design over mitigation measures which require the construction of noise barriers or structural modifications to buildings which contain noise-sensitive land uses.
7. Estimate noise exposure after the prescribed mitigation measures have been implemented.
8. Describe a post-project assessment program which could be used to evaluate the effectiveness of the proposed mitigation measures.

The noise report prepared pursuant to these guidelines should be written in a clear and concise manner, utilizing non-technical terminology whenever feasible. All technical terms should be defined in a format understandable to the general lay person.

PHOTO CREDITS

Joe Jacobson

Pages 3, 13, 17, 21, 22, 25, 28, 33, 34, 37, 110, 141

Kitty Griffin

Pages 25, 26, 27, 28, 29, 31, 48, 49, 67, 74, 77, 79, 85, 88, 90, 100, 102, 106, 119, 151

Marilyn Bardet

Pages 46, 101, 108

Larry Cannon

Pages 87, 97, 97

Ann Van Winkle

Pages 109, 122, 124

Ed Swenson

Page 135

Peter Bray

cover

Oversized Map or Foldout not scanned.

Item may be viewed at the
Institute of Governmental Studies Library, UC Berkeley.

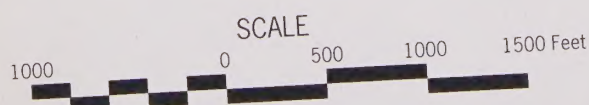
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